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ABSTRACT

This report reviews the problems of protecting nature in a heavily industrialized democracy such as the United States. Factors contributing to the establishment of protected areas in the United States are traced from the creation of Yellowstone National Park in 1872 to the present. Arguments in defense of wilderness areas consider nature as: (1) a reservoir of normal ecological processes, (2) a sustainer of biological diversity, (3) a formative influence on the national character, (4) a church, (5) a guardian of mental health, and (6) an educational asset in developing environmental responsibility. Diverse agencies, programs, and efforts exist at all levels. The National Park Service, the United States Forest Service, the Bureau of Land Management, and the National Wilderness Preservation System function on the federal level. Coastal zone management and land use laws protect natural areas on the state level, city and county parks serve as protected areas on local levels, and private organizations such as the Sierra Club also contribute to wilderness preservation. Problems arise from the conflict between economic development and nature preservation, and the popularity of nature areas which leads to their destruction. Programs in Japan, Australia, New Zealand, East Africa, Europe, the Soviet Union, and Canada are also described. (KC)

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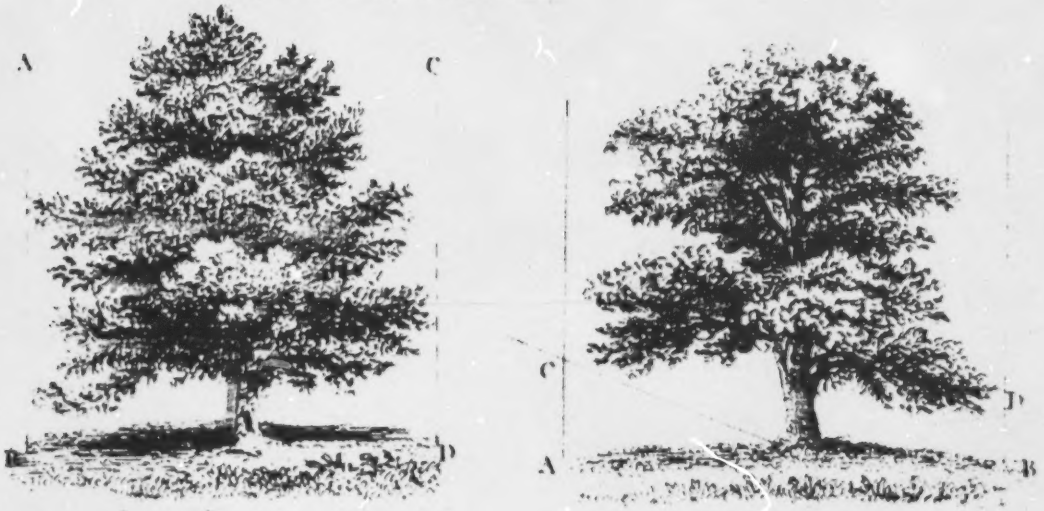
Nature in World Development: Patterns in the Preservation of Scenic and Outdoor Recreation Resources

By
Roderick Nash



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Nature in World Development: Patterns in the Preservation of Scenic and Outdoor Recreation Resources

by

Roderick Nash
Professor of History and Environmental Studies
University of California, Santa Barbara

A series of lectures delivered to Italian leaders in nature protection at the Bellagio Study and Conference Center, Bellagio, Italy, December 4 and 5, 1976.

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March 1978

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PREFACE

In December 1976, The Rockefeller Foundation sponsored a conference at its Bellagio Conference Center on Lake Como in northern Italy to review, discuss, and compare the American and Italian experience with management of parks, preserves, and recreational areas.

The origins of the conference were developed and presented to the Foundation by the Honorable Thomas W. Fina, United States Consul General, Milan. Mr. Fina was prompted to undertake the organization of this meeting because of the interest Italian scientists and administrators had expressed in learning more about the U.S. experience in conservation and environmental management. He brought to this task his own dedication to the improvement of relations between Italy and the United States, as well as his own deep interest in helping to protect the rich natural and cultural environment of Italy.

Dr. Roderick Nash, Professor of History and Environmental Studies at the University of California, Santa Barbara, was selected to present a series of lectures and lead discussions concerning the "Conservation of Scenic and Outdoor Recreational Resources: The United States Perspective." With his extensive personal experience in American conservation and his recognized expertise as a historian, Dr. Nash was able to bring professional insight from both fields to this discussion, providing a depth and perspective seldom found in the published literature. His presentation was made to twenty Italian leaders responsible for the management of parks, preserves and recreational areas. He did not suggest that the experience of one nation could serve as a model for others, but rather that the United States, with its long history of nature protection, provides an excellent case study for review and evaluation of alternative strategies. Indeed, as Dr. Nash pointed out in his preliminary discussion, there are numerous examples in the history of American environmental conservation of what not to do. It is often possible to learn as much from these mistakes as from the American successes. The purpose of the presentation was not to celebrate the American conservation movement but rather to provide a candid, non-political analysis of what has and has not worked in an affluent, heavily industrialized democracy such as the United States.

March 1978

Ralph W. Richardson, Jr.
Director, Natural and
Environmental Sciences

INTRODUCTION

While Italy is in the vanguard in the protection of man's cultural and artistic heritage, the United States has led the world in nature protection. Yellowstone National Park, established in 1872 in the state of Wyoming, was the first such reserve in the world. The "Forest Preserve" (later State Park) created in the Adirondack region of New York in 1885 was also unprecedented in the way it controlled privately owned lands for public purposes. In 1964 establishment by Congress of the National Wilderness Preservation System also marked a milestone in man-environment relations.

These American achievements in nature protection are justly celebrated. But there are, unfortunately, numerous examples in American environmental history of what not to do. Still, it is possible to learn from these mistakes if they are presented frankly and openly. The purpose of these lectures, then, is not a celebration but a candid analysis of what a heavily industrialized democracy such as the United States has done in the field of nature protection.

Italy cannot, of course, follow in the footsteps of the United States in the protection of scenic and outdoor recreation resources. Dissimilar environmental and cultural circumstances (for instance, the absence in the Italian experience of a frontier of uncivilized wilderness) thwart imitation. Yet the needs and situations of Italians and Americans, as members of dense and increasingly urbanized populations organized under federal political structures, are similar enough to raise hopes that the experience of the United States can be instructive.

PRINCIPLES OF PRESERVATION

Shortly after the Second World War, historian Arthur Schlesinger Sr. directed an essay to the question of America's contributions to world civilization. In doing so he both recognized and expressed the nation's chronic tendency to worry about the success of its self-conceived mission to improve mankind. Schlesinger identified ten contributions, including the principle of federalism, the spirit of philanthropy, and the public school. He could have added one more - the national park. The establishment of Yellowstone National Park on March 1, 1872 was the world's first instance of large-scale wilderness preservation in the public interest.

This concept of "wilderness" needs attention at the outset of any discussion of American scenic and recreational conservation. Not only is it an idea, and indeed a word, foreign to many cultures, but it is the objective of increasing numbers of Americans seeking outdoor recreation today. Essentially, wilderness is a state of mind. It is the feeling experienced by a person who believes himself to be far removed from civilization, from those parts of the environment, in other words, that man and his technology have modified and controlled.

Historians believe that one of the most distinguishing characteristics of American culture is the fact that it emerged from a wilderness in less than four centuries. For the Europeans who migrated to North America in the seventeenth century, the land they settled was a wilderness. The so-called Indians, who had occupied the region for some 20,000 years, were unfortunately regarded as wild animals. The pioneers, as these Europeans were called, had as their principal concern the transformation of wilderness into civilization. They were the vanguard of a westward-moving empire, and they referred to the continually moving line which their civilization abutted against the wilderness as the "frontier." Clearly this term signifies in the United States something quite different from Europe where a "frontier" is taken to be the boundary between nations. The American frontier was the boundary between the wild and civilized. It existed in the United States as recently as 1890. In that year the federal census published a report showing that settlement of the continent had proceeded to such an extent that the frontier no longer had meaning. Significantly, 1890 was also the year of the last major war of Indian resistance in the American West. The white man's control of the continent and its aboriginal occupants was complete.

Early American attitude toward wilderness was highly unfavorable. Wild country was the enemy. The pioneer saw his mission as concentrating on the destruction of wilderness. Protecting it for its scenic and recreational values was the last thing frontiersmen desired. The problem was too much raw nature rather than too little. Wild land had to be battled as a physical obstacle to comfort and even to survival. The country had to be "cleared" of trees; Indians had to be "removed"; wild animals had to

be exterminated. National pride arose from transforming wilderness into civilization, not preserving it for public enjoyment. But by 1872, the year of the creation of Yellowstone National Park, the attitude of some Americans toward undeveloped land had sufficiently shifted to permit the beginnings of appreciation. So Yellowstone National Park was designated on March 1, 1872 as "a public park or pleasuring ground" in which all the features of this 3,000-square-mile wilderness in Wyoming would be left "in their natural condition."

Until the American invention of national parks, the word "park" (or its equivalent in other languages) was understood as being synonymous with "garden." Nature in both was supposed to be pleasant. This meant cut grass and hedges, forests cleared of undergrowth, and artistic plantings. One thinks of the hanging gardens of Babylon, the estates of ancient Greece, Roman villas, Versailles and the Tuileries, the tradition of English landscape design - of music, philosophical dialogues and lawn games. Gardening or parkmaking consisted of shaping the environment to man's will. The idea of a wild park was contradictory. The ideal environment, and the one a park was intended to display, was the pastoral, the arcadian. Wilderness was the frightening, unordered condition from which man was relieved to have emerged. Traditional parks were symbols of this emergence, of control over nature.

It is important to understand that the appreciation of wilderness, which led to the revolutionary departure of Yellowstone from the world tradition of parks, appeared first in the minds of sophisticated Americans living in the more civilized East. George Catlin, American painter of Indians and landscapes and the originator (in 1832) of the idea of a national park, made the point clearly and succinctly. "The further we become separated from pristine wildness and beauty, the more pleasure does the mind of enlightened man feel in recurring to those scenes." Catlin was himself an example. He lived in Philadelphia, an Eastern city in one of the original thirteen states, Pennsylvania. Catlin was civilized enough to appreciate wilderness. Living in a city, he did not have to battle wild country on a day-to-day basis like a pioneer. For him it was a novelty and a place for vacation, and he looked forward each summer to escape to the wilderness existing along the upper Missouri River.

It is an unvarying rule that the nineteenth century champions of wilderness appreciation and national parks in the United States were products of either urban Eastern situations or of one of the West's most sophisticated cities, such as San Francisco. Lumbermen, miners and professional hunters did not, as a rule, advocate scenic and recreational conservation. They lived too close to nature to appreciate it for other than its economic value as raw material. Let one further example suffice to make the point. Henry David Thoreau, American nature philosopher, went to Harvard University and lived near Boston in the highly civilized Eastern seaboard state of Massachusetts. Thoreau believed that a certain amount of wildness (which he regarded as synonymous with freedom, vigor and creativity) was

essential to the success of a society as well as an individual. Neither a person nor a culture should, in Thoreau's opinion, become totally civilized. For this reason Thoreau advocated national parks as reservoirs of physical and intellectual nourishment. "Why should not we ... have our national preserves," he wondered in 1858, "... not for idle sport or food, but for inspiration and our own true recreation?" Of course Thoreau approved of, although he did not live to see realized, the idea of large national parks in the West, but he also advocated reserving wild areas in settled regions. Every Massachusetts town or village, he argued in 1859, "should have a park, or rather a primitive forest, of five hundred or a thousand acres." The public would own such places, according to Thoreau's plan, and they would be guarded against economic exploitation of any kind. With natural landscapes disappearing rapidly from the environment of the eastern portions of the United States, arguments like those of Thoreau made increasing sense. The special American relationship to wilderness - having it, being shaped by it, and then almost eliminating it - was working to create the most persuasive case for Yellowstone and the national parks that followed its lead.

While recognition of the value of unmodified nature was necessary, it was not alone sufficient to explain the birth of national parks and similar scenic and recreational reserves in the United States. A comparison makes this clear. In the Far East, particularly in India, China and Japan, a tradition of appreciating wild nature extended back at least two thousand years before the New World was even settled. In fact Jainism, Shinto and Taoism were forms of nature worship in which wildness took precedence over pastoral and urban environments. Yet there were no national parks or their equivalents in the Far East until after the American example. The reason was the absence in India, China and Japan of a democratic tradition and of the idea of public ownership of the land. Their presence in the United States is the second vital factor in explaining our invention of national parks.

Just as garden-parks existed centuries before national parks, so did extensive reserves of wild forest. They were, however, private. As far back as records are available, kings and other nobility delighted in maintaining hunting preserves. No lord was great without his forest. On occasion, a kindly landowner permitted commoners to enjoy his private park, but more often than not he had trespassers punished harshly. Some feudal codes even made poaching a capital crime. Ensuring an abundance of game for the chase necessitated keeping the preserve in something approximating a wild condition, but in regard to clientele there was little resemblance to national parks. Similarly, the great estates of postfeudal gentry throughout the western world had the purpose of protecting land from the masses.

The genius of American land policy and the fact making the creation of Yellowstone National Park possible was the existence of the public domain. The roots of common ownership of the land extend back to the 17th century. Perhaps in reaction against the

monopolistic landholding practices of feudalism and the enclosure system, the first Americans acted to protect society's interest in the environment. Private land ownership existed to be sure, but so did the idea of public ownership and the institution of the "common." The Boston Common dates back to 1634. Seven years later the Massachusetts Bay Colony passed the Great Ponds Act reserving larger bodies of water as a public resource open to all for fishing and fowling. The creation of the public domain, however, awaited independence and the states relinquishing their western land claims to Congress. New York's 1780 cession, which started the trend, deserves more recognition than it has received as a major determinant in our early national history. Between 1780 and 1802 the remaining six states with western land ceded their claims, and the following year the federal government purchased the vast territory of Louisiana including the area later to be designated the first national park. In keeping with the democratic ideal, all this land was held in trust for the people. It was expected, of course, that private ownership would eventually replace that of the government, but the initial federal control opened the possibility of keeping some land public. When and where to make such exceptions were then decided by the republican criterion of public interest.

The first legal preservation for public use of an area with scenic and recreational values occurred in 1864 when the federal government made a grant of the Yosemite Valley to the state of California "for public use, resort and recreation."* Carved by glaciers and the Merced River into the western slope of a mountain range in California called the Sierra, Yosemite ranks among the world's most spectacular scenic wonders. It was discovered by white men less than two decades before the act of 1864. The area reserved was only the valley floor, about ten square miles. The larger national park that also bears the name "Yosemite" did not exist until 1891.

Frederick Law Olmsted, the landscape architect, proved to be one of the most perceptive people of his generation in understanding the principles which justified the 1864 reservation of Yosemite Valley as a state park.

Olmsted's 1865 report also illustrates how social ownership of scenic and recreational resources could be enthusiastically supported in a nation that, especially in the late nineteenth century, valued private property and a minimum of government interference with the development of natural resources by an unrestrained capitalistic economy. Olmsted began by observing that exceptional natural environments, such as Yosemite Valley, should not become private property. He explained that it was the duty of a democratic government "to provide means of protection for all its citizens in the pursuit of

* Technically, the Yosemite grant of 1864 was not the first federal act. In 1832 some hot springs in the state of Arkansas were set aside as a national reservation. The area was tiny, however, heavily developed, hardly scenic, and very much in the tradition of public spas and baths common, for example, in Europe.

happiness against the obstacles ... which the selfishness of individuals or combinations of individuals is liable to interpose to that pursuit." Up to this time, the 1860s, few political philosophers had understood this protective function of government to extend beyond economic, military and educational considerations to those involving the enjoyment of nature. Nowhere in the documents and commentary associated with the establishment of the United States in 1776 and 1787 did the concept of "pursuit of happiness" appear to include the provision by the government of opportunities to enjoy natural scenery and outdoor recreation. Olmsted, however, argued that this was a justifiable extension of the central principle of the democratic-republican theory on which the nation stood.

Continuing his 1865 discussion, Olmsted noted how "men who are rich enough...can and do provide places of needed recreation for themselves." From the Babylonians to the aristocracy of nineteenth century Europe, Olmsted explained, "the enjoyment of the choicest natural scenes in the country...is...a monopoly, in a very peculiar manner, of a very few, very rich people." This, he declared, was a tragedy because the persons most absorbed in the daily grind of constant and low-paying labor are precisely those who need occasional contact with nature. It was not just a matter of having fun. According to Olmsted, mental health depended on finding temporary relief in the beauty of nature from the pressures of civilization. The subjects of the kings of the past, he reasoned, had been dull peasants and serfs because the ruling classes monopolized the chances to develop "the esthetic and contemplative faculties." Scenic beauty and outdoor recreation were, in Olmsted's mind, one of the best means to such development. It followed that the establishment and perpetual preservation of parks and recreational reserves for the free enjoyment of all the people was entirely appropriate in a democracy. Indeed it was, in Olmsted's concluding words, a "political duty" of "free governments." Throughout most of history a scenic wonder like Yosemite Valley might well become the private sporting ground of the richest and most powerful people in the society. In the United States in the nineteenth century it became a public park.

Commensurate with a favorable attitude toward undeveloped nature and a democratic political tradition, the final factor explaining the American invention of national parks was simply affluence. The wealth of the United States subsidized national parks. We were and have remained rich enough to afford the luxury of setting aside some land for its non-material values. Had the United States been struggling at the subsistence level, scenic and recreational conservation would have, at the least, demanded a much harder decision. Probably they would not have occurred at all. Ironically, American success in exploiting the environment increased the likelihood of its protection. The axiom seems to hold that nature protection is a full-stomach phenomenon.

Since the time of Catlin, Thoreau and Olmsted, American thinkers have substantially expanded the justification for scenic and recreational conservation. They have been aided to a

considerable extent by changing circumstances. To a far greater extent than in 1864 and 1872, when the Yosemite and Yellowstone reservations were made, the United States is now an urbanized, industrialized society. About 75 percent of the population lives in cities. The amount of wilderness (both protected and unprotected and not counting the state of Alaska) is, by most calculations, only about three percent of the forty-eight contiguous states. Close to the same amount of land is paved!

In this context, so new to Americans who once believed the wilderness beyond the frontier to be endless, several arguments have emerged to become the staples in teh contemporary defense of nature protection in the United States. They might also be applied, with appropriate alteration, to Italy or any other nation.

WILDERNESS AS A RESERVOIR OF NORMAL ECOLOGICAL PROCESSES

Aldo Leopold, wildlife manager and philosopher whose efforts in 1924 led to the creation of the first reserved wilderness on National Forest land in the U.S., once said that wilderness reveals "what the land was, what it is, and what it ought to be." He added that nature reserves conceivably had more importance for science than they did for recreation. What Leopold meant was that wilderness is a model of healthy, ecologically balanced land. At a time when so much of the environment is disturbed by technological man, wilderness has vital importance as a criterion against which to measure the impact of civilization. Without it we have no way of knowing how the land mechanism functions under normal conditions. The science of ecology needs nature reserves as medical science needs healthy people.

WILDERNESS AS A SUSTAINER OF BIOLOGICAL DIVERSITY

It is axiomatic in the biological sciences that there is strength in diversity. The whole evolutionary miracle is based on the presence over time of almost infinite diversity of life forms. Maintenance of the full evolutionary capacity that produced life as we know it and, we may suppose, will continue to shape life on earth, means that the size of the gene pool should be maximized. But with his agriculture and urban growth, modern man has made extensive inroads on biological diversity. Some of the changes, to be sure, have been desirable. But many are carried too far. More species have been exterminated in the last three hundred years than in the previous three million. Many other species, including some of the most awesome life forms on earth, are threatened. The whales fall into this category. The problem is that man in his shortsighted pursuit of what he believes to be his self-interest has branded some forms of life "useless" and therefore expendable. The creative processes that produced these life forms in the first place did not regard them as such. Modern man frequently appears to be a clumsy mechanic, pounding on a delicate and complex machine with a sledgehammer.

Wilderness and nature reserves constitute refuges where biological diversity is maintained. In such areas life forms are preserved, banked, so to speak,

against the time when they may be needed, perhaps desperately. As David Brower, the American president of Friends of the Earth and a leading contemporary defender of wilderness put it, wild places hold the answers to questions man does not yet know how to ask. Putting aside for the moment the "right" of all life to exist as it was created, there is the very practical matter of the importance of biological diversity to medical science, to agriculture, and to the perpetuation of the life-sustaining forces we are only just beginning to understand. Man pounds clumsily against a delicate machine which is nothing less than the spaceship earth - the only home he has. Nature reserves represent a step away from this potentially suicidal shortsightedness.

WILDERNESS AS A FORMATIVE INFLUENCE ON THE AMERICAN NATIONAL CHARACTER

It was not until the census report of 1890, which pronounced the frontier era ended, that many Americans began to ponder the significance of wilderness as a factore in shaping them as individuals and as a society. The link between American character or identity and wilderness was forged, as historian Frederick Jackson Turner argued so persuasively in 1893, during three centuries of pioneering. Independence and individualism were two heritages; a democratic social and political theory and the concept of equal opportunity were other frontier traits. So was the penchant for practical achievement that so clearly marks the American character.

If wilderness shaped our national values and institutions, it follows that one of the most important roles of nature reserves is keeping those values and institutions alive. Theodore Roosevelt, President of the United States from 1901 to 1909 and the leader of the first period of great achievement in conservation, was keenly aware of this relationship. "Under the hard conditions of life in the wilderness," Roosevelt wrote, those who migrated to the New World "lost all remembrance of Europe" and became new men "in dress, in customs, and in mode of life." But the United States by 1900 was becoming increasingly like the more civilized and longer settled parts of the world. Consequently Roosevelt declared that "as our civilization grows older and more complex, we need a greater and not a less development of the fundamental frontier virtues." The Boy Scouts of America was one of the responses of Roosevelt's contemporaries to the problem he described. Without wilderness areas in which successive generations can relearn the values of their pioneer ancestors, the American culture will surely change. Perhaps it should, but many remain concerned about cutting off the roots of their national character. And merely as a safeguard of an historical document, a part of the national past, we should save wilderness. Once all America was wild; without remnants to refresh our memories we run the risk of cultural amnesia.

WILDERNESS AS A NOURISHER OF AMERICAN ARTS AND LETTERS

Time and again in the course of history the native land has been the inspiration for great

music, painting and literature. What the American painter, Alan Gussow, calls "a sense of place" is as vital to the artistic endeavor as it is to patriotism and national pride. And "place," it should be clear, has to do with the natural setting. Subdivisions, factories and used car lots rarely inspire artistic excellence. Nature commonly does. Parks and reserves, as reservoirs of scenic beauty that touch the soul of man, have a crucial role in the quality of a nation's culture.

Certainly the United States would have a poorer artistic heritage without the existence of wild places of inspiring beauty. James Fenimore Cooper in literature, Thomas Cole and Albert Bierstadt in painting and, to take a recent example, John Denver in music have based their art on wilderness. In the case of the United States, wilderness had a special relationship to culture. It was the one attribute the young nation had in abundance, the characteristic that set it apart from Old World countries. Ralph Waldo Emerson and Henry David Thoreau were among the many who, by the mid-nineteenth century, called on America to attain cultural self-reliance by basing its art on the native landscape. Nature, for these philosophers, was intellectual fertilizer. Blended in the proper proportion with civilization, it produced cultural greatness. Thoreau was fond of pointing out that the grandeur of Rome at its zenith began with Romulus and Remus being raised by that symbol of the wild - a wolf. When these wild roots became buried beneath too much civilization, Rome declined and fell. The conquerors, significantly, were wilder people - barbarians from the forests and the steppes.

Even though the notion was self-serving, American artists and intellectuals in the early years of the republic took pride in the belief that they were next in a westward moving line of greatness beginning with Greece and extending through Rome, Spain and England. The American wilderness, they thought, was the equivalent of the wolf who raised Rome's famous twins. It would pour raw strength and creative vitality into the growing nation. But, ironically, the growth threatened to destroy its own wild sources. Thomas Cole's five-panel painting of 1836 the "Course of Empire" illustrated the process. In the first painting Cole showed a wilderness inhabited by hunters. The second view of the same place, a few centuries later, revealed a pastoral society with villages and flocks. In the third canvas Cole presented the zenith of empire. Elaborate buildings, looking much like the climax of the Roman Empire, dominated the scene. Nature had been totally eliminated except for a mountain peak. Then, inevitably, came the destruction of empire, and the fourth panel showed wild hordes sacking the city. In the final painting there are no people. Vines and weeds are reducing the deserted city to the wilderness from which it originated.

Cole's "Course of Empire" contained a clear lesson for the United States. If it was to avoid the cyclical pattern of rise and fall, the inspiring qualities of nature had best be made a permanent part of the American environment. The point was to avoid becoming over civilized and decadent. One means to that end,

Cole advised his countrymen, was preserving parts of the American wilderness while civilization grew up around them. Cultural greatness, indeed cultural survival, depended on this blending of environments.

WILDERNESS AS A CHURCH

With the aid of churches and the religions they assist, people attempt to find solutions to, or at least live with, the weightiest mental and emotional problems of human existence. One value of wilderness for some people is its significance as a setting for what is essentially religious activity. In nature, as in a church, they attempt to bring meaning and tranquility to their lives. They seek a sense of oneness, of harmony, with all things. Wilderness appeals as a place to knot together the unity that civilization tends to fragment. Contact with the natural world shows man his place in systems that transcend civilization and inculcates reverence for those systems. The result is peace.

Transcendental philosophers, Ralph Waldo Emerson and Henry David Thoreau, were among the first Americans to emphasize the religious importance of nature. Moral and aesthetic truths seemed to them to be more easily observed in wild places than in regions where civilization interposed a layer of artificiality between man and nature. John Muir, a leading force in the preservation of Yosemite National Park and first president of the Sierra Club, also believed that to be closer to nature was to be closer to God. The wild sierra that he explored and lived in was simply a "window opening into heaven, a mirror reflecting the Creator." Leaves, rocks and lakes were "sparks of the Divine Soul." Muir spent little time in a building called a church, but his enjoyment of wilderness was religious in every sense of the word.

WILDERNESS AS A GUARDIAN OF MENTAL HEALTH

Sigurd Olson, veteran guide and interpreter of the canoe country extending northward from Lake Superior, noted in 1946 that "civilization has not changed emotional needs that were ours long before it arose." Sigmund Freud had the same idea when he said that civilization bred "discontents" in the form of repressions and frustrations. One of the most distressing for modern man is the bewildering complexity of events and ideas with which civilization obliges him to deal. The price of failing to cope with the new "wilderness" of people and paper is psychological problems. The value of wilderness and outdoor recreation is the opportunity it extends to civilized man to slip back, occasionally, into what Olson calls "the grooves of ancestral experience." The leading advocate of wilderness protection in the 1930s, Robert Marshall, spoke of the "psychological necessity" for occasional escape to "the freedom of the wilderness."

What Olson and Marshall had reference to was the way wild country offers people an alternative to civilization. The wilderness is different. For one thing, it simplifies. It reduces the life of those who enter it to basic human needs and satisfactions like unmechanized transportation, providing water, finding shelter. Civilization does not

commonly permit us this kind of self-sufficiency and its dividend, self-confidence. A hike of ten miles has more meaning in this respect than a flight of ten thousand. Wilderness also reacquaints civilized people with pain and fear. Surprising to some, these are ancient energizing forces - springboards to achievements long before monetary success and status were even imagined. The gut-level fears associated with survival drove the wheels of evolution. At times, of course, they hurt and even killed, but we pay a price in achievement for entering the promised land of safety and comfort. For many it is horribly dull. They turn to crime or drugs or war to fill the needs for risk and challenge. Others find beds in mental institutions the only recourse. Wilderness recreation is a better alternative.

WILDERNESS AS A SUSTAINER OF HUMAN DIVERSITY

Just as it promotes biological diversity, the preservation of wilderness is an aid in the preservation of human dignity and social diversity. Civilization means control, organization, homogenization. Wilderness offers relief from these dehumanizing tendencies; it encourages individuality. Wild country is an arena where man can experiment, deviate, discover and improve. Was this not the whole meaning of the New World wilderness for the settlers who migrated to it from Europe? Wilderness meant freedom. Aldo Leopold put it this way: "Of what avail are forty freedoms without a blank spot on the map?" For novelist Wallace Stegner wild country was "a place of perpetual beginnings" and, consequently, "a part of the geography of hope." Somehow the preservation of wild places seemed to Americans inextricably linked to the preservation of free people. If there was wilderness, there could not be a technologically powered police state observing one's every move and thought. Total control of nature and human nature were equally suspect in American eyes. The naturalist Joseph Wood Krutch may have said it best of all when he observed that "wilderness and the idea of wilderness is one of the permanent homes of the human spirit."

There is another sense in which wilderness preservation joins hands with the perpetuation of human diversity. The very existence of wilderness is clearly evidence of respect for minority rights. Only a fraction, although a rapidly growing one, of the American people seek scenic beauty and wilderness recreation. Only a fraction care about horse racing or opera or libraries, or any of many other special interests of Americans. The fact that these things can exist is a tribute to nations that cherish and defend minority interests as part of their political ideology. Robert Marshall of the United States Forest Service made it plain in the 1930s that protection of minority rights is one of the hallmarks of a successful democracy. The majority may rule, said Marshall, but that does not mean it can impose its values universally. Otherwise art galleries (a minority interest) would be converted into hamburger stands and amusement parks. The need was for a fair division - of land, for instance - to accommodate a variety of tastes and values.

WILDERNESS AS AN EDUCATIONAL ASSET IN DEVELOPING ENVIRONMENTAL RESPONSIBILITY

To experience wilderness is to discover natural processes and man's dependency upon them. It is to rediscover that man is vulnerable and, from this realization, to attain humility. Life in civilization tends to promote antipodal qualities: arrogance and a sense of mastery. Not only children believe that milk comes from bottles and heat from radiators. "Civilization," Aldo Leopold wrote, "has so cluttered [the] elemental man-earth relation with gadgets and middlemen that awareness of it is growing dim. We fancy that industry supports us, forgetting what supports industry." Contact with wilderness is a corrective that modern man desperately needs if he is to achieve long-term harmony between himself and his environment.

Wilderness can also instruct man that he is a member, not the master, of a community that extends to the limits of life and earth itself. Because wild country is beyond man's control, because it exists apart from human needs and interests, it suggests that man's welfare is not the primary reason for or purpose of the existence of the earth. This seemingly simple truth is not easily understood in a technological civilization whose basis is control and exploitation. In wilderness we appreciate other powers and interests because we find our own limited.

A final contribution of wilderness to the cause of environmental responsibility is a heightened appreciation of the meaning and importance of restraint. When we establish a wilderness reserve or national park we say, in effect, thus far and no farther to development. We establish a limit. For Americans self-limitation does not come easily. Growth has been our national religion. But to maintain an area as wilderness is to put other considerations before material growth. It is to respect the rights of non-human life to habitat. It is to challenge the wisdom and moral legitimacy of man's conquest and transformation of the entire earth. This acceptance of restraint is fundamental to the beginning of the quest for people capable of living within the limits of the earth.

* * *

Nature reserves exist and will continue to exist under republican forms of government only because they are valued by the society in question. The United States had developed its present system of scenic and recreational conservation because of public acceptance of the points I have just presented. So it is that attitudes and values shape a nation's environment just as do bulldozers and chain saws. The conservation of natural scenery and outdoor recreational opportunities by Americans provides evidence, once again, of the power of an idea whose time has come.

DIVERSITY IN PRESERVATION

Protection and management of scenic and recreational reserves in the United States is a major concern. Extraordinary diversity characterizes the large number of agencies and programs that contribute to this endeavor. Characteristically in the American framework there is much cooperation among the federal, state and local levels of government as well as between government, generally, and private organizations. What follows is a detail of the broad range of responses American society has made to the challenge of nature protection.

FEDERAL EFFORTS

The National Park Service

Established by an act of Congress in 1916 as part of the Department of Interior, the National Park Service assumed management of previously reserved areas such as Yellowstone National Park (1872), Yosemite National Park (1890) and Grand Canyon National Monument (1908). The 1916 legislation specified the purpose of the National Park Service "to conserve the scenery and the natural and historic objects and the wild life [in the areas under its jurisdiction] and to provide for the enjoyment of [them] in such manner and by such means as will leave them unimpaired for the enjoyment of future generations."

As of 1975 the National Park Service controls about 31,000,000 acres of an approximate total of two billion acres in the continental U.S. The following are National Park Service holdings.

a. National Parks. Generally embracing large areas of exceptional scenic and recreational value, national parks are created by act of Congress and, with minor exceptions, are off limits to economic development of any kind except visitor services.

b. National Monuments. A category reserved for areas generally smaller than national parks and lacking their superlative natural values. Presidential proclamation, rather than an act of Congress, creates national monuments.

c. National Recreation Areas. Initially created by act of Congress to manage for outdoor recreation purposes the land and water associated with large federal dams, national recreation areas are subject to more intensive development for recreation purposes than are national parks and monuments. Some commercial utilization of natural resources, such as lumbering, grazing and mining, is permitted provided that it is compatible with the area's recreation objective.

With particular reference to Italian circumstances, several recent kinds of National Recreation Areas established in the last ten years deserve special attention.

Gateway National Recreation Area. Established in 1972, this is the first of the so-called national urban parks. It consists of five widely separated units of beaches, marshlands and islands totaling 26,000 acres in the New York harbor area. Within a few

hours of the largest concentration of people in the United States and easily accessible by public transportation, Gateway already has 7.6 million visitors annually. Development of visitor facilities will be intensive, but Gateway contains surprising amounts of pristine environment and wildlife which are the basis of its major mission in environmental education.

Golden Gate National Recreation Area. Also established in 1972 as part of the new urban emphasis within the National Park Service, Golden Gate is, like Gateway, a consolidated federally managed administrative arrangement for land previously controlled by the state, the military and private individuals as well as some previously existing federal parklands. It will eventually embrace 34,000 acres on either side of the "golden gate" which leads into San Francisco Bay in the state of California. Private holdings in the designated areas will be purchased. State lands will continue to be state-controlled but in keeping with federal purposes. As in the case of Gateway, Golden Gate's objective is to provide nearby outdoor recreation, nature education, and scenic enjoyment to a large metropolitan area.

Cuyahoga Valley National Recreational Area. Authorized in 1974 after state and local efforts launched the preservation process, it follows the valley of the Cuyahoga River between the highly urbanized areas of Cleveland and Akron in the state of Ohio. Environmental education for all ages is a primary activity in Cuyahoga, which retains a surprisingly pastoral, rural character in the most heavily populated regions of the Midwest (4 million people live less than an hour's drive away). Federal control will stop the spread of industry and private homes that otherwise would have certainly transformed the region. As in the case of Gateway and Golden Gate, the clientele of Cuyahoga has a heavy proportion of poorer Americans and minority groups. For many in these categories, a national urban park is the only opportunity to experience natural environments.

d. National Seashores and National Lakeshores. Recognizing the high recreational value placed on shorelines, the National Park Service administers as national recreation areas four national lakeshores (all on the Great Lakes) and ten national seashores. Most of these areas are near large urban centers such as Chicago and New York and function as part of the general intent of the federal government to bring parks to the people.

The United States Forest Service

The legislative history of the Forest Service dates to 1891 when the Forest Reserve Act authorized the President to set aside lands under federal control (the public domain) as "forest reserves." In 1897 supplementary legislation declared it the purpose of the reserves "to furnish a continuous supply of timber for the use and necessities of citizens of the United States."

A 1907 reorganization saw the reserves renamed "national forests" and placed in the Department of Agriculture.

In sharp contrast to the national parks, administered by the Department of Interior, the national forests were not created with a recreation mission. They expressed the essence of utilitarian conservation - the efficient management of renewable resources for long-term sustained yield. Under federal leasing arrangements intended to ensure good conservation practices, private enterprise was encouraged to harvest forest resources, to mine and to graze.

Beginning in 1917 the Forest Service began to expand its early utilitarian objectives to include public recreation. At least part of the motivation for this shift in emphasis stemmed from the success of the National Park Service (established the year before in 1916) in capturing public attention and Congressional appropriations. There was even the possibility that the National Park Service might take over Forest Service land, and the resulting bureaucratic rivalry benefited scenic and recreational conservation. Technically, of course, the national forests were never closed to public entry and recreational use such as hunting, an activity prohibited in national parks. But after 1920 the Forest Service took specific steps to attract visitors. These included:

a. Vacation Homesites. The Forest Service designated specific areas of high scenic value where families could lease (but never own) vacation, or summer, homesites.
b. Campgrounds. The Forest Service constructed and maintained numerous sites, most of them for the use of campers using automobiles. But backcountry campsites were part of the recreation programs on some national forests as were trails and back bridges across unfordable rivers.
c. Wilderness Preservation. In 1924 the Forest Service departed radically from its utilitarian beginnings by designating its first extensive wilderness reserve in the state of New Mexico. Roads and lumbering would not be permitted. Although this was an administrative decision only (there was no law involved), the Forest Service by 1940 had over 14,000,000 acres of high scenic and recreational value in the category of wilderness reserve. The 1960 Multiple Use Act confirmed the appropriateness of Forest Service engagement in recreational conservation along with its traditional utilitarian functions.

The Bureau of Land Management

All the land in the United States that has not been purchased by private owners or designated part of one of the federal landholding systems such as the national parks and national forests is under the jurisdiction of the Bureau of Land Management. In a sense these 450, 000,000 acres (an area twice the size of France) are the last American frontier, but they are widely scattered throughout the Western states. Much of the land involves little economic value and some of it, to be frank, is equally worthless for outdoor recreation. But as more publicized areas such as the national parks fill with visitors, increasing numbers

of Americans are finding recreational value in the vast spaces of BLM-controlled grasslands and deserts. There are few restrictions on the use of land in this category of federal ownership but just a few recreational facilities. BLM land is open to economic activity, principally grazing, but a few desert canyons in Utah, Arizona and Colorado have been dedicated by the Bureau to wilderness recreation.

The Fish and Wildlife Service

The National Wildlife Refuges which the BFWS administers have the primary purpose of protecting wildlife habitat. But within the conditions of this mandate, the refuges are open for recreational purposes and some have important wilderness and scenic values.

The Bureau of Outdoor Recreation

Established in 1963 following a recommendation by the Outdoor Recreation Resources Review Commission, the BOR does not manage land. Instead it is responsible for coordination of state, local and private efforts in the field of outdoor recreation as well as for research and education. A kind of ambassador-without-portfolio in the parks and recreation field, the BOR has been a great success. Using revenues from the Land and Water Conservation Fund (established in 1964), the BOR makes grants to state projects approved as part of a statewide recreation plan. As Americans seem more willing to think in terms of specific proposals in given localities, the BOR is significant in supporting long-range and regional scenic and recreational development.

The National Wilderness Preservation System

As in the case of national parks, the United States led the world in giving legal protection to wilderness under the National Wilderness Preservation Act of 1964. The national park system had, of course, protected wilderness but not by name and always with the option of extending recreational facilities on undeveloped park land. The United States Forest Service recognized wilderness as early as 1924 but only as a temporary administrative policy, not law. The Wilderness Act in 1964, however, was clear in its intent: "In order to assure that an increasing population accompanied by expanding settlement and growing mechanization, does not occupy and modify all areas within the United States... leaving no lands designated for preservation and protection in their natural condition, it is hereby declared to be the policy of the Congress to secure for the American people of present and future generations the benefits of an enduring resource of wilderness."

Although it did not satisfy everyone on the question of definition, the Wilderness Act had to confront the problem of stating what wilderness is. The following text resulted:

> A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean in this Act an area of undeveloped

> Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.

The Wilderness Act created the National Wilderness Preservation System. An imaginative response to the patchwork quilt of federal land jurisdiction, it solved the problem by leaving the wilderness in the hands of those agencies already managing it. The Wilderness Act simply required the agency in question to preserve the wilderness character of the land in its charge. In effect the act established a kind of land-use zoning within existing national parks, forests, and wildlife refuges. No new bureaus or extra funding were required. The National Park Service and the United States Forest Service, which controlled most of the area involved in the new system, went right on with their management activities. It was just that their mission had been specified and confirmed by Congress in accordance with changing public priorities.

The National Wilderness Preservation System is open-ended. Land may be placed in it by Congressional action. The Wilderness System began in 1964 with 9 million acres of "instant" wilderness - all of it national forest land already being managed for wilderness values. Six million acres have since been added as the result of a laborious process of agency review and Congressional approval. Eventually some 35 million acres (about 2 percent of the forty-eight states) may be protected in the National Wilderness Preservation System.

National Trails System

In 1968 Congress acted to encourage the preservation and expanded designation of hiking and horseback trails. The first two placed in the system traced the major mountain ranges of the nation: the Appalachian Trail extends 2,000 miles along the crest of the Appalachian Mountains from the state of Maine to the state of Georgia. The Pacific Crest Trail runs from the Mexican to the Canadian border, generally through mountains such as the Sierra in the state of California and the Cascade Range in the states of Oregon and Washington. Both trails are interesting examples of collaboration. Considerable federal lands are involved in the long linear right-of-way that constitutes the trail. But states are encouraged by the 1968 act to develop and maintain portions of the trail on their lands. Other portions of the trails pass through private land. Here the government attempts either to secure cooperation or purchase the land in question.

Like the National Wilderness

Preservation System, existing federal agencies, such as the National Park Service, continue to manage the sections of the trail within their jurisdictions. Also in the manner of the Wilderness System, more trails can be placed in the system after appropriate study and approval. The historic Oregon Trail on which so many pioneers moved from the Mississippi Valley to California and Oregon is being considered as a "scenic trail." So are a number of shorter, so-called "recreational trails" many of which will be administered for the federal system by local authorities.

A 1976 Congressional act encourages hiking, horseback and bicycle trails along canal towpaths, abandoned railroad rights-of-way and aqueduct easements.

National Wild and Scenic Rivers System

At the same time that the National Trails System was established in 1968, the President signed legislation creating protection for American rivers with exceptional scenic and recreational values. Eight rivers with a combined length of 392 miles were placed in the system at the outset and a mechanism was created to add others after review. The point of the National Wild and Scenic Rivers System was to preserve rivers in their free-flowing condition (dams and diversions were prohibited) and to freeze development along their banks. Recognizing that rivers are linear resources that encounter varying degrees of human development along their banks, the act designated three categories of river environment:

a. Wild rivers are the most primitive, generally inaccessible by car, and with no structures such as houses along their banks.
b. Scenic rivers are accessible by roads and have limited recreational facilities.
c. Recreational rivers are readily accessible and have a wide range of facilities, including small towns and farms, along their banks, but they "remain esthetically pleasing."

The 1968 legislation protecting rivers was wise in that it recognized that a single river might have all three environmental categories. This flexibility in the act allowed for protection of a wide variety of conditions. Insistence on a high degree of wildness would have disqualified sections of rivers with great scenic and recreational value.

STATE EFFORTS

In outlining state contributions to the conservation of scenery and outdoor recreation it must be noted that the nation, not the states, controlled and still controls public lands not owned by citizens. So it was that the major role in nature conservation has been played by the federal government. But states can acquire land, create parks and reserves and regulate private land holdings in the interest of conservation. In the absence of regional political units such as the twenty organized in 1970 in Italy, the states are the agency most commonly involved in land-use planning and coastal management.

NEW YORK'S ADIRONDACK STATE PARK

The most important exception to the rule that state parks are

smaller and less significant than national reserves is Adirondack State Park in New York. It is the most noteworthy state contribution to scenic and recreation conservation in the United States. But what is particularly notable about it is that the method of land management, in which public and private holdings coexist, is capable of being applied to countries with limited amounts of public lands.

Westward expansion left generally uninhabited a large region of heavily forested, mountainous country in northern New York. In the middle years of the nineteenth century it became a mecca for Eastern city dwellers seeking vacations, and many individuals bought property in the area. The interest of these vacationers in protecting the natural qualities of the Adirondack area led to calls for reserving it as early as 1857. In 1872, the same year as the creation of Yellowstone National Park, the New York State Park Commission organized to consider the possibility of protecting the Adirondacks. Concern over providing a forested watershed for New York City's municipal water supply mingled with scenic and recreational considerations. In 1885 New York's governor approved a "Forest Preserve" of 715,000 acres in the Adirondacks. In 1892 the reservation was renamed the Adirondack State Park, expanded to 3 million acres and dedicated to public recreation as well as water supply.

The most interesting aspect of the creation of Adirondack State Park was that much of the 3 million acres within its boundaries was privately owned. The makers of the park simply drew a blue line on a map around the area they wanted protected. Inside it were vacation homes, farms, lumber mills, hotels and even villages and small towns. New York state did not attempt to buy out these private holdings. Instead it used its police power to regulate them in the interest of maintaining as natural an environment as possible. In effect the Adirondack State Park applied the principle of zoning to an entire region. At the same time, New York moved to acquire as much land as it could within the famous blue line defining the park. But the success of the Adirondack State Park was not dependent on total acquisition as would be the case in most national parks. Today the Adirondack State Park consists of 3.7 million acres of privately owned land and 2.3 million acres of state-owned land. The Adirondack Park Agency has authority to manage both kinds of property particularly with reference to the question of growth. While not as easy as the monolithic government control found in national parks, the Adirondack system is ideally suited for nations where the impulse to protect nature comes decades or centuries after settlement.

Coastal Zone Management

In 1972 a federal Coastal Zone Management Act encouraged formation by local or state governing bodies for planning and managing land use in this critical area where it is likely that 80 percent of the American people will live by the year 2000. States and localities are encouraged to inventory the scenic and recreational resources of their coastlines and institute action to protect them. Private appropri-

ation or misuse of key coastal properties is the chief cause for concern.

With its extensive coastline on the Pacific Ocean, the state of California has been in the forefront of coastal zone management. In 1972 a citizens' referendum placed on the ballot a proposal to create a Coastal Zone Conservation Commission. Passed by the voters in the general election, the bill created six regional commissions composed of locally elected officials and members drawn from the general public. The commissions have control through a permit system of all proposed development from the mean high water mark to a line 1000 yards inland. Even private property owners cannot alter their holdings without approval. There are obviously major implications for scenic and recreational conservation in this system.

In November 1976 California voters reaffirmed their desire for scenic and recreational protection of the coastline by voting to tax themselves, through the state, to acquire more coastline for public parks.

Land Use Laws

Several states have recently moved with force and effectiveness in the direction of controlling private development that has an impact on the environment. Many of the state laws are similar to the federal National Environmental Policy Act of 1970, which requires "environmental impact assessments" for each expenditure of federal funds with a possible effect on the environment. But some state laws, like that of Vermont, go farther in that they also regulate many kinds of private development. In Vermont, 1970 legislation empowered district environmental commissions to judge if a proposed alteration of the landscape violates any of ten concerns. One of the ten is the "scenic or natural beauty of the area, aesthetics, historic sites, or rare and irreplaceable natural areas." Unless the commission issues a permit the development may not proceed. Interestingly, any construction above the 2,500 foot elevation in this region of lovely mountains must be approved.

Maine has a similar state governmental structure, part of which restricts private development where it "would jeopardize significant natural, recreational and historic resources."

Hawaii, America's island state in the middle of the Pacific Ocean, has the most radical land use laws currently in effect. On the basis of maps drawn in 1966, all land in the state is classified as urban, agricultural, rural or conservation. The less developed parts of the islands and those at higher elevations are classified as "conservation." The use of land in this category is tightly controlled by state regulations favoring nature protection and public recreation. In effect the freedom of private landholders is severely restricted in the interest of protecting the public's right to scenic and recreational resources.

LOCAL EFFORTS

City and Country Parks

Beginning, in a sense, with the establishment of a "common" in the city of Boston in 1634 as a place where all citizens could graze cows, the local park has been an important part of American

recreational resources. Protecting spectacular natural scenery is not the objective at this level so much as providing city dwellers with a chance to find "breathing space" and establish some contact with the natural world. Central Park in New York City is perhaps the best American example of this institution. The design of the landscape in this ten-square-mile area was entrusted to Frederick Law Olmsted in 1853. As New York grew up around the park the temptation to build within what must be some of the world's most valuable real estate was strong. But with the exception of a museum, a zoo and one restaurant, all the facilities in Central Park are geared to outdoor recreation.

In recent years cities like Denver, Colorado and St. Louis, Missouri have used federal and state funds to acquire public open space along the rivers that wind through them. Private citizen initiative is the starting point for these efforts.

Zoning

The principle of regulating private development in the interest of the public welfare (the police power of government) and the need for land-use planning in America's rapidly growing cities led to the rise of zoning ordinances. In 1919 only twenty cities had zoning in effect. Nine years later the number of communities with zoning totaled 973. Zoning is local law and some of it has application to the conservation of scenery and recreational opportunities.

Local zoning ordinances have been used in the United States to limit outdoor advertising (billboards) where they are judged destructive of scenic values. Providing an aesthetic environment for the welfare of the people is the reason for this curtailment of private freedom with regard to land use. Zoning that prohibits construction of houses on beaches has been upheld on the grounds that such construction would adversely affect public recreational use. A 1972 court decision upheld local zoning in the state of New Hampshire that required a 6-acre minimum lot size in a community. The preservation of scenic values and the rural character of the locality was the principle behind the decision. Similar zoning ordinances have prevented agricultural land from being suburbanized. In the state of Wisconsin zoning legislation permits local government to establish 300-foot setbacks, for buildings along navigable streams and 1,000-foot setbacks from lakeshores. In Connecticut a local ordinance, upheld in a landmark judicial decision in 1970, required a developer of a 275-acre parcel to donate part of it for a public park.

Since zoning is an application of the police power of government, no compensation to a private owner as a result of reduction in property values caused by the imposition of zones can occur.

Conservation Easements

A conservation easement or conservation restriction is a legal document that permits the purchase, usually by the local government, of what are called "development rights" from a private landowner. The possession by the public of such rights is a way of keeping open space without

acquiring outright title to the land in question. American law, in other words, permits a community to purchase from a landowner a legally binding guarantee that his land will not be changed so as to affect scenic and recreational values. For a monetary consideration the individual's right to do what he wants to do with his land is limited by society. The same limitations apply to subsequent owners as well.

Conservation easements are of two main types:

a. Positive easements give the public the right to use the land for a particular purpose such as hunting or hiking.
b. Negative easements limit the owner's use of his land to ways approved by the local community. Maintaining open space or wildlife habitat is the usual purpose of negative easements. They can also be used to prevent removal of trees or interference with streams.

There are several ways in which local government in America acquires conservation easements:

a. Direct purchase from the owner. The power of eminent domain may be used to force such a sale. Whether the public wants physical access to the land is immaterial; courts have ruled that sufficient public interest for the institution of eminent domain powers may merely involve looking at the property from outside its boundaries.
b. Conferral on the owners by local government of compensatory benefits like a new road or water line.
c. Decrease in the owner's property taxes. This "tax relief," whether it results in a legal easement or not, has proved of great importance in persuading farmers not to sell their land to subdividers. If the local government lowers his property taxes, the farmer can afford to keep farming or ranching his land. This is the arrangement in force under the California Land Conservation Act (Williamson Act) of 1965. When agricultural taxes are lowered, the tax burden of the community obviously shifts to other owners who, in effect, "buy" open space with their increased taxes. But the cost of protecting natural beauty is far less by the conservation easement route than by direct public purchase of title.

PRIVATE EFFORTS

In the American context, nearly all conservation of scenic and recreational resources including the establishment of national parks results from the determination of a few individuals who care. Citizens are the prime movers; the government responds to pressure. There are several ways in which individuals or groups of individuals acting as citizens have been effective in advancing the kind of conservation under consideration.

Conservation Easements

It should be clear that the conservation easements discussed earlier are not always forced on unwilling landowners. Many Americans who own land love its natural character, desire to perpetuate it during their lifetimes and beyond, and are willing to share its scenic and sometimes its recreational values with fellow citizens. An easement agreement can facilitate their

intentions. In such cases the landowner approaches a government entity (like a park board) or a semi-official "land-trust" or a private conservation organization and offers an easement. This freezes the condition of the land in question since the deed is "in perpetuity." The owner continues to own his land but after easement is executed even he can't change his mind about its use. In exchange for the easement the landowner receives several benefits. The easement at once removes pressure for development. It guarantees that the land will remain open and scenic and supportive of wildlife during and after the lifetime of the owner. More to the point in some calculations, the easement stabilizes or reduces property taxes since the land can no longer be taxed on the basis of its development potential that is often many times its monetary worth as permanent open space. In some instances protecting the quality of a particular environment actually increases its monetary value. Private landowners, then, often regard conservation easements as legal confirmation of their own intentions with attractive tax advantages. The landowner benefits and so does the public. Americans are discovering that scenic and recreational resources do not have to be in the public ownership to serve a public purpose.

Donations

A surprising amount of nature protection in the United States from local parks to federal holdings is the result of land philanthropy. Many altruistic individuals, and some seeking financial benefits like the elimination of taxes, have simply given or bequeathed land to a government agency or a private conservation organization for the public enjoyment. Unlike the conservation easement the title in donated land is transferred.

Sometimes the donor is a business organization. In 1972, for example, the Union Camp Corporation donated 49,000 acres for the establishment of the Great Dismal Swamp National Wildlife Refuge in the state of North Carolina. In 1976 the Weyerhaeuser Company donated an additional 11,000 acres to this refuge. The land is valued at $6 million.

Individuals also give land for public scenic and recreational uses. There are a variety of legal instruments for conveying property. Commonly the land is donated to a conservation organization which acts as trustee. The Audubon Society and the Nature Conservancy often play this role. Private donations are usually small in size but frequently near large metropolitan areas and thus of special importance as an antidote to urban conditions.

Private Assistance in National Park Establishment

Occasionally a citizen appears in the United States whose commitment to nature protection is accompanied by an extraordinary degree of wealth. The results are then spectacular. The philanthropy of John D. Rockefeller, Jr. is a case in point. Over the course of several decades he gave millions of dollars which made possible the establishment in their present form of Eastern parklands such as Great Smoky Mountain National Park (the most heavily visited in the American

system), Shenandoah National Park, and Acadia National Park. In the West, Rockefeller took a special interest in Jackson Hole and the Grand Teton range that rises behind it in the state of Wyoming. The place was ideal for a public park, but private owners controlled the essential land and were rapidly developing it. Acting through an agent to prevent land prices rising to prohibitive levels, Rockefeller quietly bought up most of the holdings in Jackson Hole. Then he turned them over to the federal government for the purpose of creating Grand Teton National Park, one of the finest parks in the entire system.

The Nature Conservancy

This unique and highly effective conservation organization grew from a committee organized in 1917 to acquire natural areas for scientific research. The preservation of rare and endangered ecosystems is still a high priority in its work, but the Conservancy has expanded its efforts to include scenic and recreational resources as well. It not only receives donations but maintains a revolving fund with which to purchase land it wishes to protect. The scale of the Conservancy's work is not inconsequential. Over the years it has obtained over 1600 parcels of land totaling almost a million acres. The Conservancy prefers to donate land it has acquired to a government agency, but in some instances it holds and manages the land itself.

The advantage of an organization like the Nature Conservancy is that it can move quickly to acquire threatened land. The appropriation of public funds by a government agency is a much slower process. Sometimes the public money comes too late to save the area. There is also the problem of rapidly rising land values. By the time the government is ready to purchase, the price may well have doubled or tripled beyond what the Conservancy would have paid. There is, after all, nothing like demand to send prices soaring. If a landowner knows his property is wanted for a park, he boosts his selling price. The Nature Conservancy succeeds only to the extent it can keep money in its revolving fund. For this reason the Conservancy commonly sells the land it acquires to the government at cost, then uses the government money to buy new land.

A typical achievement of the Nature Conservancy involved the purchase of seventeen square miles in California's Santa Rosa mountains as a bighorn sheep habitat. Government funding was not available at the time and the land would otherwise have been sold to developers. The land was later transferred at cost by the Conservancy to the state of California.

Across the continent in Connecticut a group of citizens operating as a committee within the Nature Conservancy used land donations, purchases, government grants and local cash contributions to acquire six miles of the scenic Mianus River Gorge. The achievement was the more remarkable because the area in question is close to New York City in one of the nation's highest priced real estate regions. The committee now has opened the Mianus River Gorge Natural Area to the public; it is an encouraging example of private outdoor recreational opportunities.

Citizen Conservation Organizations

The multiplicity of citizen groups concerned with conservation in the United States is a decided asset in nature protection. Some of the groups, such as the National Audubon Society, buy or receive gifts of land in the manner of the Nature Conservancy. Others - the Sierra Club (170,000 members) and the Wilderness Society are good examples - work to stimulate citizen concern and influence government action. Friends of the Earth is an avowed lobbying organization so monetary contributions to it are not tax exempt. The National Parks and Conservation Association defines its mission as that of supporter, but also a critic, of the National Park Service. All these organizations are capable of meeting a conservation crisis (such as the proposal to dam the Grand Canyon, to be discussed later) by generating a widespread citizen protest. Capable of mounting sufficient publicity to unseat elected officials, such expression of citizen opinion is one of the major influences on the conservation of scenery and outdoor recreational opportunities in the U.S.

PROBLEMS OF PRESERVATION

While the following discussion is largely in terms of national parks, there are comparable problems in other types of federal reservations and on the state and local levels.

COMPETING USES: ECONOMIC DEVELOPMENT VS. NATURE PRESERVATION

It is always a mistake to regard society, particularly one as large and diverse as the United States, as monolithic. Usually within the confines of their federal constitution (the Civil War of the 1860s being a notable exception), Americans constantly argue over national policies and priorities. National parks are a case in point. Although the United States invented this form of land use by creating Yellowstone National Park in 1872, it has never gone unchallenged in the country of its birth. The reasons are not hard to discern. National parks and similar scenic and recreational reserves stand fully athwart the American mission of growth, territorial expansion, and environmental exploitation. The parks, in a sense, are the last frontier, and a large part of American time and energy has gone into pushing back and ultimately eliminating frontiers. Undeveloped land was not only useless in the utilitarian value system to the pioneer but it was also a threat to the precarious civilization he built so laboriously. Historically, most Americans saw themselves as aligned against wilderness in a kind of giant football(soccer) match. It was a case of conquer or be conquered, and even after the frontier ended in 1890 pioneer biases against wilderness continued.

In fact it has been argued that the only reason national parks existed at all was that they were created on lands society regarded as not good for anything else. Consider the sheer walls of the Grand Canyon, the heights of Yosemite and Yellowstone where frost occurs every month of the year, and the glaciers of Mount Rainier. From the utilitarian viewpoint these areas seemed utterly valueless at the time of their dedication to national park purposes. Of course the scenery of a region had a role in qualifying it for a park, but there were very scenic parts of the Midwest that became cornfields. The point is that Midwestern land was valuable in economic terms. No one seriously proposed a national park the size of, say, Yellowstone in Illinois or Iowa. Northwestern Wyoming was a different story. Americans could never grow corn there. The land was useless, so why not make it a national park. At this early stage Americans solved the problem of competing demands for parks by locating them in places where competition did not exist.

This kind of backhand justification of national parks succeeded as long as the land in question remained truly without economic use. If such a use was discovered after the park was established, then the stage was set for a bitter reexamination of the decision to set aside the land for scenery and outdoor recreation. In fact this has happened again and again in the history of American national parks. The

first important instance occurred in the 1880s and concerned the attempt of a railroad company, interested in serving some newly discovered mines, to lay its tracks over Yellowstone National Park.

The Congressional debate over the railroad's application was a classic statement of the main issues. Those in favor of the railroad talked about "millions upon millions of dollars [that] shall be permitted to have access to the markets of the world." They thought it absurd that "the right and privileges of citizenship, the vast accumulation of property, and the demands of commerce" would be denied so that wild animals and wild country could be preserved. The response to this argument by the defenders of Yellowstone National Park stressed national pride in beautiful scenery. The selfish greed of the exploiters should not be permitted to destroy a resource all Americans now and in the future could enjoy. There were, in other words, limits to the claims of even such hallowed parts of the American tradition as free enterprise, and one such limit was the boundary of a national park. Concluding the debate, a member of Congress from New Jersey declared: "the glory of this territory is its sublime solitude. Civilization is so universal that man can only see nature in her majesty and primal glory...in these as yet virgin regions." Americans, he argued, should prefer "the beautiful and sublime...to heartless mammon and the greed of capital."

The vote in the House of Representatives following this 1886 exchange found the railroad application denied 107 to 65. But competing demand for the land occupied by national parks continued to mark the early history of these reservations. The climactic confrontation occurred in 1913 and involved another of the showpieces of nature protection in the United States: Yosemite National Park in California. Once again a use was proposed for part of the park that no one anticipated when it was created twenty-three years before. This time it was the city of San Francisco demanding permission to place a dam on a river in Yosemite and thereby obtain both hydroelectric power and a municipal water supply. It was a harder question than the railroad proposal in Yellowstone. This time the interests of all the people in a major city, not just the owners of a mine, were involved. Many sincere conservationists approved of San Francisco's application. Theodore Roosevelt, who had just left the presidency, was among them. So was the man who, as head of the United States Forest Service - Gifford Pinchot - coined the term "conservation." Even some members of the San Francisco-based Sierra Club thought that damming the river for domestic use represented its highest use. A lake, they noted, would not destroy the beauty of the surrounding mountains, but enhance it.

On the other side of the Hetch Hetchy issue, as it was called from the name of the valley that would be flooded, stood those who believed in the national park idea. Their leader was John Muir, president of the Sierra Club and the prime mover in having Yosemite named a national park in 1890. "Our wild mountain parks," said Muir, should be "saved from all sorts of commercialism and marks of man's works." The dam and

reservoir might not be as ugly as a mine or a railroad, but it was not natural. The wilderness qualities Yosemite was created to preserve would be destroyed. Moreover, Muir reasoned, if Yosemite were compromised, it would create a precedent. How could any public nature reserve in the future resist demands for economic exploitation?

After a bitter, protracted battle, Congress and the President approved a bill in 1913 giving San Francisco the right to dam Hetch Hetchy Valley. In time the dam was built and a valley many regarded as the scenic equal of the famous Yosemite Valley just to the south disappeared beneath the impounded water of a reservoir. San Francisco could have obtained its water elsewhere; the Hetch Hetchy plan was only the least expensive of several options. The loss of the valley is still considered the greatest mistake ever made in America's management of its national parks.

John Muir died, heartbroken, a year after the loss of the Hetch Hetchy battle. And many felt the decision in favor of economic development would be the beginning of the end for the national parks. In fact, the reverse was true. In the 1950s the nation again had to decide whether to permit a dam in a unit of the national park system called Dinosaur National Monument. This time the dam was defeated. Similarly in the 1960s proposals to dam the Grand Canyon were blocked. The Hetch Hetchy decision had, in effect, been reversed. In exploring the reasons why, several factors appear important.

The National Park Service

Created in 1916, in the aftermath of and in response to the Hetch Hetchy defeat, the National Park Service moved quickly to solidify the place of the parks in government as well as in public opinion. The first director of the National Park Service, Stephen T. Mather, was expert in public relations. Placing strategic articles in national magazines and taking important politicians on wilderness trips in the parks, Mather succeeded in making Americans proud of these resources. Moreover, the National Park Service gave the parks a solid political base in the federal government. The case for the parks would henceforth be made by bureaucrats whose jobs depended on the success in that mission. The appearance in the nation's capitol of a strong institutional framework for administering the national parks was clearly an asset in future resistance of comepeting demands for their resources.

An Effective Citizens Lobby

At the time of the Hetch Hetchy defeat in 1913 there were only seven national and two state conservation organizations. In the 1950s, when Dinosaur National Monument was successfully defended, the numbers had jumped to 78 and 236, respectively. Not only was the number of citizens' organizations willing to defend parks greater, their political effectiveness was much improved. During the Hetch Hetchy battle, John Muir and his few colleagues were political neophytes. San Francisco's skilled lobbyists worked effectively to line up the votes that they needed. But the friends of national parks had learned their lessons well. By

the 1950s and 1960s they were ready with consolidated representation in Washington to lobby for their position. Color films and spectacularly illustrated books appeared to publicize the value of the parks. Letter-writing campaigns succeeded in stuffing the mail-boxes of Senators and Representatives with protests. Advertisements in nationally important newspapers and magazines made their case clear. Effective statements at Congressional hearings generated support. Furthermore, the preservationists had become adept at the political infighting that so often in the American system determines the outcome of a controversy. For example, the Dinosaur National Monument dams were part of a much larger Western water project. As long as those dams remained in the bill, preservationists announced, they would block the entire project. It was not an idle threat: the conservation lobby had the votes. Thus the proponents of the water project were confronted in 1955 with the choice of holding out for the Dinosaur dams and getting nothing or yielding on the dams within the national park system and getting approval of the other non-controversial parts of the bill. Faced with this decision between half a loaf and none at all, they reluctantly backed down. The political sophistication acquired by the preservationists served national parks well.

Convincing Arguments

Fundamental to the more effective defense of scenic and recreational conservation in recent years has been the evolution of a more convincing justification of its importance in modern American civilization. The eight points outlined in the first chapter were not utilized in the Hetch Hetchy controversy. Some, like the importance of biological diversity, were not even understood at the time; others were not widely accepted. Preservationists of the 1950s and 1960s are the beneficiaries of the thinking of Aldo Leopold, Robert Marshall, Sigurd Olson, Howard Zahniser, David Brower and many other interpreters of the value of nature protection. The application of their ideas in recent controversies explains the ability of preservationists to win the support of both the public and the government.

Changing Circumstances and Attitudes

Between 1913, when Yosemite National Park was compromised by the loss of Hetch Hetchy Valley, and 1968, when the Grand Canyon dam proposal was defeated, the circumstances of American life and the attitudes of American citizens experienced far-reaching changes. The changes in circumstances had a common direction - toward a more complex and faster paced civilization. The attitudinal changes were also consistent - toward increasing doubts about the beneficence of a civilization that was not at least partially diluted by the presence of scenic beauty, wilderness, and opportunities for outdoor recreation. American anxieties about the ending of the frontier bore fruit as the century progressed in greater public receptivity to the preservation message. The decrease in open scenic and wild country is itself the best explanation for public acceptance.

Economic Benefits of National Parks

In some minds the best answer to the argument that reserving land in national parks entails an economic sacrifice, is to prove that parks can make money, more, in fact, than if the land were logged or mined or farmed. The key to this argument is the park visitor and the money he spends in and around the reserved area. Kenya has justified an entire system of national parks almost entirely on the revenue and jobs they generate. The localities around American national parks have experienced similar benefits. Local recognition that parks and reserves don't "lock up" resources so much as they exploit them in a different, non-consumptive way, has been important in building the preservation movement or at least reducing opposition to its goals.

Substitution of National Criteria for Local Criteria

Despite increasing recognition of the economic benefits of parks that stem from tourism, local interests, particularly in the West, are often hostile to parks. The idea that it was San Francisco's business, or at least that of California, was in part responsible for settling unfavorably the Hetch Hetchy controversy regarding Yosemite National Park. Generalizing from this, the West has never been enthusiastic about removing the possibility of economic exploitation of any land. Closer to the memory of the frontier than Easterners, people of the American West have traditionally resisted scenic and recreational conservation. Recently, however, there is an increasing tendency for government to decide issues, such as that concerning dams in the Grand Canyon, not on the basis of what the state of Arizona wants, but rather on the basis of national needs and priorities. This means that through the national government the feelings of people in, say, New York State have as much impact on the use of national parks in Arizona as do people who live in Arizona. In this way that part of the nation with the most interest in preserving wilderness (the East) has a voice in the affairs of that part of the country which possesses the wilderness. The Grand Canyon dam controversy firmly established the principle that the Grand Canyon did not "belong" to Arizona, that the interests of the nation, and indeed of the world, would be considered in determining the future of that special place.

Through the give and take of a republican system of government generally accepted, if not always applauded, Americans adjudicate the competing demands of those who would exploit and those who would preserve scenic and recreational resources such as national parks. In this competition the advantage has swung in recent years to the side of the parks but only because "progress" in the traditional economic sense has prevailed for most of American history. The end result of the competing demands is, inevitably in a democracy, a balance. There are cornfields and there are parks; there are factories and there are wilderness areas. The proportion is important. Most of the debate in the United States is over how the scales are weighted. No one proposes a solid wilderness or a solid factory for the land-

scape. Within this spectrum there is heated controversy. The outcome, given enough time, is almost always a reflection of what the people desire. That they want both parks and pavement is evident on the face of the American land today.

COMPETING USES: RESORTS VS. WILDERNESS

Within the definition of national park purpose offered by the 1916 organic act, there is considerable ambiguity. This lack of a clear understanding of the function of national parks constitutes their most serious problem next to that of resisting economic development. It is a problem that could be termed "internal" as opposed to the "external" threat of economic interests. Park administration, in other words, has been and, in some views, still is its own worst enemy. The matter, at its essence, boils down to whether the recreation or the preservation mandate of the parks should predominate.

For many decades in the early history of the national parks prevailing concepts of tourism and recreation dictated that the parks would be resorts. This meant extensive roads, elaborate hotels, and staged amusements such as regular feeding of bears with hotel garbage and the famous "firefall" at Yosemite. This consisted of pushing a huge bonfire over a 3,000-foot cliff every night for the pleasure of assembled tourists on the valley floor below. It also meant ski lifts, tennis courts, swimming pools and golf courses in the national parks. Significantly, the National Park Service in its early years did nothing to discourage such activities. On the contrary, the park staffs fed the bears and built the fires that fell off cliffs. Such things were not considered violations but, rather, implementations of the legislative mandates which, after all, declared Yellowstone to be a "public park or pleasuring ground for the benefit and enjoyment of the people." There was also the preservation mandate, but it was generally assumed that nobody would come to see the nature so preserved if they had to "rough it" in the language of the early twentieth century. And visitors were crucial. Without them parks lost political leverage, appropriations, and possibly even their justification for existence. So parts of the early national parks became quite civilized resorts. Even so dedicated an advocate of wilderness as John Muir supported the admission of private automobiles into Yosemite National Park in 1913.

The passage of the National Park Service Act in 1916 did not change these conceptions of the meaning, purpose and appropriate use of national parks. Although the legislation stipulated that anything done in the parks must leave their natural features "unimpaired," the whole reason for their being was indisputably public enjoyment. And pleasure seeking people could impair nature. But Americans in 1916 and for several decades thereafter did not worry about this inconsistency. For one thing, most of them did not want what a later generation would call "a wilderness experience." Moreover, the early park leaders made no attempt to define the kind of "enjoyment" that was appropriate in national parks, no effort to distinguish

uses that were compatible with the mandate to leave the park unimpaired. And so colored spotlights played on Old Faithful, the famous geyser in Yellowstone National Park. Between its hourly eruptions tourists were entertained by broadcast radio music.

Until the 1930s no one particularly minded the resort or circus function of national parks. But in that decade and increasingly thereafter a competing conception of the meaning and purpose of national parks challenged the older ideas. Starting from the premise that preservation, not public enjoyment, was the principle upon which the management of parks should be based, the new perspective took a dim view of bear feeding and firefalls and golf courses. Even roads and hotels were questioned. In 1940 the Sierra Club had the leading role in pushing through Congress a bill establishing Kings Canyon in California as a roadless (and hotel-less) national park. The theory behind such acts was that the national parks should not try to please everyone. They had a particular function in preserving nature. People who defined their enjoyment in terms of experiencing unimpaired nature would delight in the national parks; those who liked resorts should go to resorts and not expect to find them in the national parks.

The resort concept of national parks did not, of course, disappear overnight. Indeed the 1950s saw a renewed emphasis on "facilities" in the reserved areas. Roads were extended and improved. New motels appeared on the rim of the Grand Canyon. Parking lots proliferated as more and more of the parks disappeared under pavement. Calls to emphasize the preservation function of parklands also increased and intensified. A 1963 report declared that the parks should be biocentric rather than anthropocentric, that they should emphasize the integrity of biological processes rather than the comfort and convenience of man. Understanding of the science of ecology stimulated this change, and so did the growing American awareness of the manifold importance of wilderness.

The United States acted to resolve this disagreement over park purposes by creating the National Wilderness Preservation System in 1964 and superimposing it on the system of monuments, national parks and recreation areas. In effect, the Wilderness Act created a means of zoning within the parks. Some land would be left developed for high intensity tourism. But the rest of the parks, including all the roadless backcountry, would be placed in the National Wilderness Preservation System and thus be given the protection of law against even those developments which had public enjoyment in mind. Indeed the 1964 statute specifies that the purpose of the protected land was to offer the public "enjoyment as wilderness." Henceforth, the people who demanded paved roads and a roof over their heads at night (but not the bear feeding and the firefall) could enjoy parts of the parks. So could the people who liked to be alone, with their sleeping bag and tent, in a wilderness. Once again a balance had been found between two competing uses of national parks.

LOVING WILDERNESS TO DEATH

The surge of interest in the United States in wilderness-

oriented outdoor recreation helped produce the National Wilderness Preservation System and reorient the purpose of national parks, but the popularity also caused a problem. As ecologist Stanley A. Cain has remarked, "innumerable people cannot enjoy solitude together." Too many visitors can ruin wilderness, which, after all, is a state of mind, just as surely as too many bulldozers or chain saws. After years of encouraging Americans to leave their cars and take to the trails, wilderness advocates found they had succeeded perhaps too well. Wilderness could be loved to death. The gravest future threat to America's little remaining wilderness will not come from its traditional enemies (the economic developers) but, ironically indeed, from its newly acquired friends.

The problem of what was called the "impact" of recreational users on natural areas was first discussed in American conservation circles in the late 1940s. At that time the use of wilderness for recreation was still comparatively light. But in the next twenty years it experienced an incredible growth. Consider the following figures for boat trips on the Colorado River through the Grand Canyon of Arizona. The area is a national park and one of the wildest regions (in terms of distance from a road) in the forty-eight states.

Table 1
Travel on Colorado River through the Grand Canyon of Arizona

Year	Number of People
1867	1/1?
1869-1940	44
1941	4
1942	8
1943	0
1944	0
1945	0
1946	0
1947	4
1948	6
1949	12
1950	7
1951	29
1952	19
1953	31
1954	21
1955	70
1956	55
1957	135
1958	80
1959	120
1960	205
1961	255
1962	372
1963-64	2/44
1965	547
1966	1,067
1967	2,099
1968	3,609
1969	6,019
1970	9,935
1971	10,385
1972	16,432
1973	15,219
1974	3/14,253

1/Some contend that James White, a trapper fleeing Indians, floated through the Grand Canyon on a makeshift log raft 2 years before the famous expedition of John Wesley Powell.

2/Travel on the Colorado River in these years was curtailed by completion of the Glen Canyon Dam upstream and the resultant disruption of flow.

3/This decrease was the result of the institution by management of a quota system. The numbers applying for permits continued to rise sharply.

To review these figures and to realize that almost all the use of the resources occurs in the three summer months is to understand that the quality of the wilderness experience in the Grand Canyon has declined precipitously. Some would even contend that far as it is from civilization, the area is no longer wild.

Destruction by popularity confronted American managers of scenic and recreation resources with an unprecedented problem. The numbers of backcountry visitors continued to rise. At this juncture in the 1960s national park and other wilderness managers began to consider the old animal husbandry concept of "carrying capacity." Applied to the management of a range, it meant the number of cattle that a given area could support without suffering deterioration. Recreation managers suspected that the same logic could be applied to wilderness. The carrying capacity of a given area would be the number of visitors it could absorb without losing its wilderness. Applied to parks in general, carrying capacity refers to the number of people that can be accommodated without impairing the natural resource or compromising the satisfaction of the visitor.

In the case of wilderness, carrying capacity may be considered to have three dimensions:

1. Physical carrying capacity, which refers to the effect of human visitation on the nonliving environment such as soil and water. The ability of a particular kind of terrain to resist trail erosion is a factor. So is a region's ability to "absorb" constructed trails, bridges, roads, signs and other man-made features without a significant effect on its wild qualities. When such synthetic objects are felt by the visitor to dominate the scene, its physical carrying capacity as protected wildland is exceeded.
2. Biological carrying capacity is the impact of visitation on the living things that occupy an environment. When an area's natural complement of plants and animals is substantially altered, biological carrying capacity is exceeded. This is of paramount importance to natural areas that are being managed on biocentric principles or for scientific reasons. Of concern is not just the extermination of certain species but significant alteration in the way it lives.
3. Social or psychological carrying capacity, the most subtle, but in many ways the most important component of the concept of carrying capacity, this relates to the effect on the experience of a park visitation of the presence of other people. The basic assumption is that wilderness, and to some extent all scenic and recreational reserves, implies the absence of man. The level of visitor tolerance of others varies, of course. At one extreme are those for whom the sign, sound and even the knowledge that another camper or camping party is nearby spoils their experience. Obviously there are few public park systems that can offer fortunate visitors the luxury of being completely alone. But a reasonable degree of solitude, for instance, the opportunity to camp away from

the presence of other parties, is the goal of many American wilderness parks.

At the other extreme are people whose chief delight in a park experience comes from association with other visitors. They like and welcome crowds. Solitary camping for them would not only be disappointing but positively frightening. Recreational psychologists feel that most visitors fall between these extremes in that they are able to accept the presence of others up to a "saturation" point. After this the quality of their experience deteriorates rapidly. The region they are in is no longer perceived as either wild or natural. It has, in fact, been loved to death.

Initially the managers of parks and reserves in the United States attempted to deal with the problems caused by popularity in ways that did not affect the number of visitors.

Site Management

Accept unlimited visitation and try to make the site stand the impact. Barricades around fragile areas, paving of trails, irrigation of meadowland, replacement by use-tolerant species, and the provision of more huts and facilities are all possible responses. But they all clearly violate biocentric management criteria which place the integrity of the resource first. In spite of their proven utility in handling large groups, Americans have never accepted the European "hut" system of backcountry accommodation. They prefer totally self-sufficient "backpacking" as opposed to "hiking" from hut to hut.

Modification of Visitor Behavior

This alternative stresses visitor education in what are called "minimum impact" or "clean" camping techniques. It assumes that people can be taught to respect the natural qualities of an area and as a result will not cut down living trees, put soap in lakes, or leave trash in the backcountry. Up to a point it works, provided, of course, that visitor behavior can really be modified far from the observation of enforcement authorities.

Regulation of Visitor Behavior

This is a more active form of management than modification because it establishes specific rules which people admitted to an area must follow. These include regulation of party size and length of stay. Assignment of specific campsite is undertaken. Gas or propane stoves are required and wood fires banned. Heavily used campsites are periodically closed and permitted to recover some of their natural characteristics.

LIMITING THE USE OF RESERVED AREAS BY QUOTAS AND PERMITS

While these three management options had some effect on raising the carrying capacity of an area, they were not nearly sufficient to protect it and the experience it was established to provide in the face of growing numbers of visitors. Limitation of recreational use was the only answer. This meant establishing a quota based on a region's carrying capacity. Entrance permits would be issued to keep visitation within the predetermined carrying capacity.

Only those who obtained permits could use the park. Therefore, some people would not be able to use a highly popular park in a given season.

The quota and permit system now in effect in most of America's federally managed wilderness areas is not well liked. For managers it is an added administrative burden. For visitors it is a limitation on the freedom which they seek in wilderness. It brings a system like reserved seating in an opera house to something many think should be an unregulated experience in keeping with the whole meaning of wilderness as the uncontrolled environment.

Quotas based on carrying capacity are, however, accepted. Their institution in the Grand Canyon explains why the number of visitors leveled off after the 1972 season. The logic that persuades Americans to agree to the permit system might be illustrated by comparing the situation in popular parks and wilderness to the game of tennis. Tennis players would certainly like to play whenever they wish for as long as they desire. But the popularity of the game does not permit this luxury except for those who can afford private courts. These fortunate few can be compared to the medieval nobility with their private game reserves.

On public courts, comparable to public parks, demand commonly exceeds available space. Hence management, with the consent of the players, institutes controlling devices like sign-up sheets, time limitations, and rules about how many sets of tennis an individual may play in a day or week. The alternative is to have no management. Suppose that everyone who has a tennis racquet feels entitled to play at any time. "Triples" would be common and on popular courts at peak demand such as weekends a kind of volleyball with racquets might be played. Faced with this alternative, players accept limitation. They recognize that tennis is played by two or four persons. Out of respect for the game's integrity and with their own self-interest in mind, players accept quotas. They understand that the "carrying capacity" of a tennis court is no more than four people. They sign up, wait their turn, and vacate the court at the appointed hour. It is frustrating, but they know that when it is their turn, they play the game they enjoy.

Wilderness and many other forms of outdoor recreation are also "games" that cannot be played at any one time and place by more than a few persons. Respect for the quality of the experience argues for the acceptance of regulated use, however distasteful from other considerations. Inconvenience and disappointment for some people is the inevitable result of the quota system but without it no one will experience real wilderness. With quotas in effect, when one's turn arrives, the wilderness is at least there to enjoy. Many problems remain in applying fairly the permit and quota system in the United States, but it appears to be the best hope for preserving a bona fide wilderness experience in the face of rapidly escalating demand for contact with wild country.

THE PROBLEM OF DEMOCRACY AND WILDERNESS PRESERVATION

Wilderness preservation and

management for wilderness recreation is, of course, a kind of discrimination. Compared to areas that are open to mechanized transportation, wilderness discriminates against the elderly, the infirm, the overweight and the lazy. For some Americans this is a violation of the democratic principle which they interpret to mean that everyone is entitled to everything. A more intelligent understanding of democracy suggests that equality of opportunity is the principle of importance. Let some things, like wilderness, be earned by those who can pay the physical price. Surely this is the same as saying that only those who are qualified should sing in an opera or pilot an airplane. The mountain climber "earns" his peak. To put a cable car on the mountain so that everyone can attain the summit is a perversion of the whole philosophy of opportunity. Still there are continuous calls to "open up" the wilderness since it is public land and all the people have the right to see it.

FIRE

The question of the role of forest fires in scenic and recreation reserves may be taken as a representative example of the broader issue of how far man controls these areas. For many years the managers of parks and reserves in the United States diligently extinguished every fire regardless of whether the cause was natural (lightning strike) or human carelessness. In fact the United States Forest Service created the symbol of Smokey the Bear to aid in its advertising campaign to "prevent forest fires." The rise of the science of forest ecology has recently brought a new perspective to this issue. Fires, gradually, were understood as part of the natural forest ecosystem, a living force of the forests long before the recreation-minded man appeared on the scene. Indeed some seeds needed the searing heat of fires in order to germinate. The unnatural accumulation of underbrush in some regions kept free of fires by human control posed a problem to many forest species.

With these new facts available some managers of American parklands have experimented with a policy of letting natural fires take their own course. The immediate effect on the forest is, to be sure, not aesthetically pleasing for man. But is man's pleasure or the maintenance of natural processes the prime consideration of park management? It is the familiar problem arising from the ambiguity of park legislation. The recent efforts to live with fire rather than absolutely suppress it gives indication of a maturing understanding of both the park mission and ecological processes.

FINANCES

In the United States at the present time nature protection and the provision of outdoor recreation opportunities are called a "motherhood" issue. That is to say, almost everyone approves of them in theory. It is when the theory needs translation into hard fact, when, in other words, the bills have to be paid, that the agony begins. Like every other publicly supported function in the United States, parks and reserves have to compete for a finite amount of tax dollars supple-

mented, some would say unfortunately, by deficit spending. There never has been strong support any place in government for charging park admission fees sufficient to cover operating costs.

Few publicly supported activities in the United States ever feel they have enough money. The whole method of budgetary allocation is to make agencies operate with less than they think possible. Year after fiscal year, agencies like the National Park Service and the United States Forest Service submit requests and year after year they are pared down. In 1976, for example, the National Park Service requested $77 million above the 1975 budget for operating funds. The Office of Management and Budget, speaking for the President, sliced this figure to $19.9 million. The National Park Service had to lower its expectations. This meant less staff, less maintenance of facilities, and less development of new parks and services. With park visitation climbing rapidly (it increased in all units of the National Park Service from 113.7 million visits in 1965 to 228.9 million visits in 1975), this poses a problem. The visitor inevitably gets a poorer product and the land itself receives less attention from the staff. But parks do have a certain advantage. Unlike military operations, for instance, parks have direct contact with citizens. This translates into political influence. A trail closed because it needs maintenance, discontinued interpretive lectures, a broken handrail which is a safety hazard - these are all on public display. A citizen learns they have been casualties of cuts in budget requests. He writes to his Congressman or Senator and perhaps he joins the National Parks and Conservation Association as a way of expressing his concern. Others do the same. The result is pressure on government which quickly realizes budgetary decisions regarding national parks are open to full view. If cuts in the overall budget are to be made, it is far better to make them in ways that have less direct impact on citizens' lives - at least from a public relations standpoint. As a result of their nationwide clientele the parks have an advantage in the competition for public funds.

The Land and Water Conservation Fund, established in 1965, is one response to the financial needs of scenic and recreation conservation. The Fund, which could amount to $200 million annually, is derived from entrance and user fees at certain federal areas, from the sale of surplus federal property, and from a four cent excise tax on motorboat fuels. Every year there is money accumulated in the Fund that is available for allocation. The states receive 60 percent of the Fund, but they must match the federal grants with an equal amount of state-raised money. The federal government spends the remaining 40 percent of the Fund for planning, acquisition, and development for recreation areas.

CONCESSIONS

"Concessions" is the term used in the United States to refer to the private tourist-catering businesses under contract to the government in national parks. Provision of food and accommodations in the national parks is not a government operation.

Private companies undertake these services hoping to make a profit in the capitalistic economy. The problem is that many Americans, including many politicians, feel that it is not proper to grant a preferential contract with an exclusive right to do business and make money in a government preserve. The concessionaire does not face competition in the parks as he would outside their boundaries in, for instance, provision of food to the traveling public. Contracts to concessionaires are not even awarded on the basis of competitive bidding. Generally, the concessionaire is a long-time operator in the park and his proven ability to meet the public's needs is the primary determinant in his selection to serve the park. Again, there is widespread suspicion that concessionaires have an "old boy" relationship with park authorities and that their operations are a virtual empire outside public control. This is not entirely the case. For example, recent public criticism overturned plans of the concessionaire in Yosemite National Park for more intense and more civilized use of the already highly developed Yosemite Valley.

PERSONNEL TRAINING

The National Park Service is justifiably proud of its training program. Employment is based on civil service examinations as well as a college background in resource and recreation management. After several years of service, promising employees are sent to one of the two "training centers" maintained by the National Park Service. For six weeks at government expense they receive intensive instruction in the philosophy of national parks and the management techniques that implement that philosophy. Field and class work are combined in a balanced program directed at producing a park professional. There are also shorter courses in specific skills such as fiscal administration, underwater diving, safety, curatorial methods (museums), interpretation and visitor services, maintenance, concession management, search and rescue, and historical and archaeological research. Graduates of these courses are prepared to take leadership roles in park activities.

A separate Federal Law Enforcement Training Center was established in 1976 to improve law enforcement procedures in the national parks. Disorder has been a source of many problems in recent years as park visitation has grown and diversified. In actuality, park officers have the same kind of task that faces a police force in a medium-sized town.

They have no help; state and local policemen do not have authority in the federal reservations. In the past, law enforcement in the parks has not been a signal success. Rangers do not like to be policemen and have, on occasion, mishandled near-riot situations. In a notorious confrontation in Yosemite National Park rangers descended to the level of throwing rocks at unruly young people camped in an illegal area. Training programs have improved personnel qualifications to the point where the recurrence of such events is unlikely.

Beginning in 1974 the National Park Service adopted an imaginative program for utilizing the talents of interested citizens in

park work. Called the Volunteers In Parks (VIP) Act, it authorizes the Service "to recruit, train, and accept...individuals without compensation as volunteers for or in aid of interpretative functions, or other visitor services." The Volunteers In Parks are not federal employees. But their assistance has the dual benefit of helping in the park service mission as well as giving enthusiastic citizens a chance to be part of the national park effort. The Service is authorized to provide food, lodging, uniforms and transporation to the VIPs. At this relatively small cost the staff of the Service can be significantly expanded.

VISITOR EDUCATION AND PARK INTERPRETATION

Lapse of the "resort" concept of national parks has left the challenge of educating the visiting public in the preservation function of the parks. The purpose of interpretive programs is to improve the quality of visitor experience and to obtain visitor cooperation in park preservation purposes. Recently a third dimension has been added. In the wake of the "environmental revolution" in the United States in the 1960s, the national parks have been asked by the government to do their part in building environmental responsibility in American society. Lessons learned in parks about nature and its processes are supposed to extend past the visit to influence behavior at home. "Environmental education" is a new parks' mission.

Almost all the parks have interpretative displays and lecture programs. Formerly concerned almost exclusively with describing features of the park, they now give considerable attention to helping the visitor see and appreciate his place in the natural scheme of things. At the entrance to wilderness areas trail signs remind hikers of responsibility associated with use of wild country. Vandalism still occurs, but its frequency is decreasing as more and more Americans become aware that experiencing unspoiled nature is not a right but a privilege.

The most aggressive education programs, such as the Yosemite Institute in Yosemite National Park, bring a succession of school groups to the park for a week of intensive instruction and contemplation. Some of the children are from poorer families. They come on scholarships provided by the Institute and schools. The others are asked to pay a modest fee to cover living expenses and salaries of instructional staff. The groups use facilities of the Yosemite concessionaire who welcomes this off-season(winter, generally) activity. The use of national parks for environmental education activities of this sort is an extension of the neighborhood nature "field" trip already in wide use in American schools.

Whereas classes go to Yosemite National Park, several schools in Denver, Colorado pool their environmental education money in a joint effort which takes 12- to 16-year-old students on week-long trips to several outdoor recreation areas in Colorado. The students earn money for these environmental education weeks throughout the year; a small school budget pays salaries of instructors. Such educational programs are not only good for young Americans in their efforts

to learn environmental responsibility, but they provide a compelling rationale for the existence of parks and reserves.

PROBLEMS

Extrapolating from present trends it seems certain that demand of people for scenic and outdoor recreation resources will continue to increase. In the future, factors which already mark urban-industrial civilization in some countries will become widespread. They generate need for recreational contact with nature. Lifestyles of people in the final quarter of the twentieth century are becoming less and less involved with nature. In some places, this has produced a back-to-the-land movement. But most citizens of industrial nations do not wish to return on a permanent basis to what little nature they can find. Instead they will demand more and more recreational contact with the natural world as a counterweight, so to speak, to their predominantly civilized lives. Put in mathematical terms, the shape of the future will look like this:

> Increasing affluence + increasing leisure time + increasing mobility + urbanization = greater demand for nature.

At the same time that the demand for nature increases, the supply of nature, particularly wild nature, certainly will decrease. Heightened competition for outdoor recreational resources will be the result. This so-called "crisis" in outdoor recreation was noted by Resources for the Future a decade ago, but perception of the full implications of escalating competition for nature are only beginning. It could be that future generations will receive as a birthright a certain number of days that they may spend in beautiful and wild country in the course of their lifetime. That is their quota. According to individual taste, days might be bought from or sold to others. The opportunity for unlimited contact with nature, particularly wilderness, is fast disappearing. As an example, the managers of Grand Canyon National Park are already talking about allocating trips on the Colorado River to an individual only once every five years. In 1977 there will be over a thousand applications for non-commercial trips on the Colorado River through the Grand Canyon. Only thirty to forty trips will be permitted.

One hopeful consequence of this kind of increasing demand is the probability that outdoor recreation resources will be better protected and even extended by governments of the future. With the kind of attention it now receives as a mecca for wilderness enthusiasts, there is much less chance for the Grand Canyon being dammed today than there was in the mid-1960s when few people entered the interior gorges. For the same reason politicians at every level of government who do not recognize and provide for the growing public need for nature will open themselves to risk of expulsion from office.

The American experience suggests that the challenge of providing parks, scenery and outdoor recreation opportunities in the future will have two major dimensions. One will remain protecting for controlled public use the most superlative natural places in a nation's environment.

Because such areas are usually mountainous and wild, they will normally be at a considerable distance from most of the nation's population. Fortunate citizens can perhaps reach such areas for extensive vacations only a few times during their lives. Such areas, which should have national park status, are therefore not "meaningful" to most people most of the time. It is satisfying, of course, just to know that they exist. People can be proud of their parks without ever seeing them. But in the course of their daily and weekly routines, the great national parks have limited recreational meaning to the average citizen. What significance, for example, will the spectacular national parks proposed for the state of Alaska have for Americans living in New York City? It is 8,000 miles from New York to Alaska. Few New Yorkers will ever see the reservations that the government offers as the heritage of every American.

This reality raises the second major dimension in nature protection of the future, and that is the provision of "meaningful" reserves reachable in a day or less by most of a nation's population. The point is this: a single tree, adjacent to a home or office or factory, is in many ways more important than Yellowstone National Park. This explains why standards for parklands must vary with their location. It is useful to insist on pure wilderness conditions when discussing parks in Alaska. It is nonsense to insist on the same criteria in the Eastern portions of the United States where little nature remains unmodified. Still, the East must have its parks and reserves, too. In some ways it needs them more than the West or Alaska. Let them be less wild in the East; let them be within sight of great cities as the new Gateway National Recreation Area near New York City.

The basic goal of park and recreation planners of the future should be to build a balance between nature and civilization into the lives of every citizen. In some places they should create a huge national park. In other, less wild, regions it will mean establishing a small day-use park. In cities they should maintain green and open space between skyscrapers and at the ends of subway lines. At a regional level the ideal balance of natural and man-made environments will surely involve working with private landowners and towns and farmers along the lines of the Adirondack State Park in New York or the English National Parks.

The probable shape of the future suggests another truth - it will never be easier and cheaper than it is right now to guarantee to the citizens of any nation a heritage of protected nature.

EXPORTING/IMPORTING NATURE

It was July of 1831 in the Michigan Territory of the United States, and the natives of this underdeveloped nation could not believe their eyes and ears. At first the pioneers naturally assumed the purpose of the elegant Frenchman, Alexis de Tocqueville, was lumbering or farming or land speculation. They gathered survey equipment and prepared to take their visitor to choice locales. But the Frenchman said all he wanted was horses, food, and a guide. He just wanted to go into the woods to look.

Shaking their heads in disbelief, but willingly accepting de Tocqueville's money, the local people entered the nature tourism business. They organized a pleasure trip into the wilderness. In retrospect, their attitudes interested de Tocqueville as much as the Michigan landscape. The American pioneer, he reasoned, lived too close to wilderness to appreciate it. On the other hand, people from developed nations, like himself, had built a nearly ubiquitous civilization. For them, wilderness was a novelty whose attractiveness increased in proportion to its rarity.

De Tocqueville's Michigan experience illustrates an axiom of environmental history: nature appreciation, and particularly nature protection, are characteristic of highly civilized societies. They are full-stomach phenomena. A culture must become civilized and highly developed before nature preservation makes economic and intellectual sense. From this follows the irony of global nature protection. It might be said that development, which imperils nature, is precisely that which creates the need to protect nature. In other words, the cultures that have wild nature don't want it, and those that want it don't have it. The road to nature appreciation and protection leads inevitably to and through a highly sophisticated, technological, urbanized civilization. There are no shortcuts. Nature appreciation is a post-civilization phenomenon.

The corollary to this is that on a world level the primitive is an actively traded commodity; there exists what might be termed an export-import relationship between the wilderness haves and have-nots. Before development, or in its developing phase, a culture or nation is a wilderness "exporter"; it "sells" wilderness to visitors. The wilderness does not, of course leave the country. The means of export is tourism: the minds, spirits, and cameras of visitors from the highly industrialized nations. And there are people who derive pleasure simply from the knowledge that unspoiled nature exists. This vicarious wild nature consumer group has been an important source of financial support for world nature protection.

Conversely, the developed nations "import" wildness - paying for it with the money that tourists like de Tocqueville eagerly spend. The philanthropies that fund world nature protection organizations also constitute nature importing. And so does the purchase of books, films and

television specials on foreign wilderness. National parks, wilderness systems, and even the people who manage them might be thought of as the institutional "containers" that developed nations send to underdeveloped ones for the purpose of "packaging" the exportable resource - wilderness.

Underdeveloped nations might evolve to an economic and intellectual position in which nature protection becomes important. In the meantime the preservation of wild places and wild things in the developing nations depends on the existence of developed nations and of the world nature "market." Nature protection, to be frank, is the game of the rich, the urban, and the sophisticated. They are the clientele of wildness wherever it exists. They subsidize the decision of the underdeveloped world to protect nature. Without such subsidies, the prospect of nature protection would be poor given the economic aspirations of the developing world.

Nature importing and exporting is the basis of the World Trust, an idea expressed most frequently by Russell E. Train, former chairman of the Council on Environmental Quality. Train thinks that the developed nations should take the lead to insure the preservation and proper management of extraordinary natural areas in the rest of the world. This means underwriting and technical assistance, and also autonomous status for so-called world parks. It is the politics of this last point that has kept the concept from moving beyond the inventory stage.

For almost all of the 19th century, the United States was a classic developing nation, characterized by large amounts of wild land and, in general, exploitive attitudes toward it. There were a handful of Americans sufficiently urbanized to care about nature, but in general foreigners like de Tocqueville led the way. Before him, for example, there was Francois-Rene de Chateaubriand who reveled in the wilds of northern New York and eastern Kentucky in the winter of 1791-92. Lord Byron did not visit the New World, but he celebrated Daniel Boone as a wild man in a wild environment. In the middle decades of the 19th century a number of foreign visitors to the United States and its western territories came with big-game hunting in mind. With elaborate equipment and large retinues,they shot their way through a West that they clearly regarded as an enormous hunting preserve. The presence of aboriginal guides and white scouts completed the quasi-feudal atmosphere of these wilderness pleasure trips, the best documented of which are the 1830s expeditions of Sir William Drummond Stewart and the Prince of Wied-Neuwied.

By the end of the 19th century the proportion of wilderness to civilization in the United States had shifted dramatically. Frederick Jackson Turner made this a subject of widespread public concern in 1893 by arguing that the frontier no longer existed. Not all America was ploughed and paved, of course, but the truly vast wildlands, populated with free-ranging big game and aboriginal hunters, had become memories. The upstart American nation had made it to "developed" status. It had also invented the national park with the establishment in 1872 of the Yellowstone reserve. Significantly, railroad entre-

preneur Jay Cooke was an avid supporter of the early national parks. His eye was on the tourist revenue and the same argument was used to win support among the local populations in Wyoming and Montana. In a preview of what would soon occur on the international level, Americans from the developed East were already "importing" wildness from the still undeveloped West.

A change in attitude, favoring wildness, quickly followed the change in America's environmental condition. So did the start of wilderness "importing." With its own wildness shrinking rapidly, a stream of wealthy individuals - the American counterparts of de Tocqueville - began to flow toward the world's remaining wild places for adventure and pleasure. Theodore Roosevelt is, of course, the classic example. His early personal history was thoroughly upper class, urban, and civilized. In 1883 Roosevelt went West and watched the last remnants of the frontier die in the Dakotas. In 1909 he began a year-long safari in Africa, where the concentrations of big wild animals and primitive peoples offered what the American West lost a generation before.

Americans of the early 20th century, with less wealth and fewer connections than Theodore Roosevelt, did their wilderness "importing" vicariously. One of the primary purveyors was a chronically unsuccessful hack writer named Edgar Rice Burroughs, who in 1912 struck it rich with the invention of America's best-known literary character: Tarzan of the Apes. Burroughs' contemporaries, and civilized peoples around the world, were fascinated by the idea of a white baby abandoned on the West African coast and reared in the jungle by apes. That Tarzan grew into a superman was ample evidence of the benefits associated with contact with the wild. And Burroughs' choice of Africa as the setting for his tale showed that sufficiently primitive conditions could no longer be found in the United States, Italy, France, Japan, or dozens of other nations which avidly consumed the stories.

The concept of wilderness was created by civilization. About twenty thousand years ago, herding and agriculture introduced the idea and practice of controlling nature to a hunting-gathering species that for eons had been controlled by nature. The advent of technological civilization accelerated the assumption of man's superiority to the rest of life and his right to order the environment in his own interest. One result was the creation of "wilderness" - as that part of the earth alien to civilization and resistant to its control. It required a town or a cultivated field or a corral to define "wild" country. It required domesticated animals in order to conceptualize "wild" ones.

Civilized people, then, regard as wilderness what uncivilized men call home. As an example of the resulting perplexities consider the 19th century comments of Chief Luther Standing Bear of the Oglala Sioux: "We did not think of the great open plains, the beautiful rolling hills, and the winding streams with their tangled growth as 'wild.' Only to the white man was nature a 'wilderness' and only to him was the land 'infested' with 'wild' animals and 'savage' people. To us it was tame."

As Standing Bear saw so well, the problem was that the white man, committed to controlling the earth since civilization began, feared and hated uncontrolled, "wild" nature. Its presence rebuked him and mocked his efforts. Moreover, civilized man was not at home in unordered natural environments. His comfort and security, and his pride, came from dominating rather than accepting the natural scheme of things. But hunter-gatherers like Standing Bear did not succeed by controlling the environment or breaking nature to their wills, consequently they had no reason to fear or even to think about the uncontrolled. There was no city-country distinction, no "frontier," no forest primeval. Every place was home. Without civilization there was no wilderness.

CASE STUDIES

The following review of the experience of selected nations with the allocation and management of scenic and outdoor recreation resources is done with the broad brush of cultural generalization and does not emphasize legislative history. While much of the discussion refers to wilderness it is relevant to any kind of nature protection.

JAPAN

Japan's national parks and wilderness areas are unquestionably the most heavily used of any in the world. The nation packs over 100 million people into an area smaller than California. The Japanese, moreover, are a highly developed, urbanized people with the affluence and leisure necessary to exercise their need for nature. They also possess a cultural tradition that nature is divine spirit or Kami in Shinto philosophy. By "nature" the Japanese mean not only ordered, pastoral environments useful to man. Mountains and waterfalls and surging storm clouds were manifestations of divinity that man would do well to contemplate. Opposed to the hostile, even malevolent, character of undeveloped nature prevalent in the Western world until recent times, Shinto, Tao and Zen Buddhism provided intellectual foundations for a thousand years of appreciation of wild places in the East.

Japan rapidly became westernized following the Perry visit in 1853, and lost most of its traditional land-man harmony. Today the atmosphere of Tokyo is among the world's most polluted. Yet within sight of the city, on one of its relatively few clear days (about 1 in 7), is Fujiyama. It is a mountain that the Japanese value from the standpoint of both ancient cultural tradition and the recent need to escape urbanism. The Japanese prefer to give the 12,467-foot high volcanic cone the more venerable name, Fujisan. It is part of Fuji-Hakone-Isu National Park, and, incredibly, over 70 million people visit the area each year. One million of them climb the final 5,000 feet (from the end of the road) to the summit of the big mountain. Due to heavy snow the climbing season is short, and in the peak summer months, 25,000 people per day make the ascent. There are five trails to the crater rim; according to Tetsumaro Senge, Chairman of the National Parks Association of Japan, "every climbing route is filled with long queues of people

so that no one can find space and time to stop and rest." This is literally the case. The lines of climbers wind up the switchbacks like huge, multicolored snakes. At night, with flares, they resemble glowworms. The individual is literally carried up and down the nation's highest peak in the flood of bodies.

Although Fuji is exceptional, other natural areas on this densely populated island are also crowded. Even the so-called "roadless wilderness areas" are thronged. In the Oze area of Nikko National Park, an alpine peat marsh was saved from a highway in the late 1960s only to be overwhelmed by 500,000 hikers (70 percent of them female) every year. The circuit through the marsh takes two days, and huts are used for the night, at least by the early arrivals. Similarly, there are long waits at most of the cliffs suitable for technical rock climbing such as those in the Chubu-Sangaku National Park. Helicopters regularly haul away the trash from the tent slums in this alpine region. Only the northernmost Japanese island, Hokkaido, retains a vestige of what Americans would call primeval conditions including wild bears. Daisetsuzan National Park embraces part of the area, and its relative remoteness from the main centers of Japanese population on the main island of Honshu has acted as a filter. But the leisure, wealth, and recreational tastes of the urban population are catching up even to Daisetsuzan which now hosts more than 3 million visitors annually. Their demands for fast motorized access led to the recent withdrawal of a proposal for a wilderness area in the park.

In the face of this kind of pressure on their wilderness qualities, Japanese managers have turned to zoning. Under the 1972 Natural Environmental Protection Law, which updates the 1931 park organic legislation and its 1957 refinement and clarification, there is a mandate for inventory and subsequent designation of "Primeval Nature Preservation Areas." These are completely closed to use including recreational activities. The remainder of the park may also be categorized according to degree of wildness and there is consideration of a permit system based on the concept of carrying capacity, ar idea inspired by discussion of this issue in the United States. The park zoning system established under the 1957 legislation is the logical institutional vehicle to implement carrying capacity management concepts. There are "Special Protection Areas," "Special Areas," and "Ordinary Areas." The first category, the most protective, comprises only 11.4 percent of the total park area in Japan, but in some of the alpine parks the figure jumps to 38 percent. Grazing and lumbering are not allowed in the "Special Protection Areas"; in principle, hydroelectric development is forbidden. Yet hydropower installations have been constructed, and there is even talk of nuclear plants in the protected areas. From recreational facilities such as trams, ski lifts, roads, hostels, and even lavish resort hotels, many Japanese tend to see no conflict with preservation.

One reason why there is not much concern for wilderness in Japan is lack of a clear distinction between "scenery" and "wilderness." Scenery might not be destroyed by a chair lift or

lodge; indeed, such developments often facilitate public enjoyment of it. Both destroy wilderness. Still when there were proposals to construct a mechanized lift to the summit of sacred Fuji, a coalition of priests, citizen conservationists, and professional park administrators defeated the idea. There is sentiment to remove the ski lift that served the 1972 Winter Olympics from Mt. Eniwa on Hokkaido. These examples are rare in a nation literally crawling over itself to find some contact with nature.

A more subtle problem facing wilderness in Japan is, ironically, the superior ability of the Japanese to derive pleasure and meaning from nature. They don't need wilderness in the American sense; nature in miniature will suffice. A long cultural tradition, steeped in the philosophies of Tao, Shinto, and Zen lies behind this ability. It is manifested in the Japanese love of garden art, of bonsai, of flower arrangement and of the tea ceremony. All these interests reflect the idea that beauty, spiritual insight, and peace come from within the beholder and not from the external environment. The process is intuitive and unexpected. It involves thinking metaphorically. It depends on placing oneself in the proper frame of mind, not on entering a particular environment. It follows that huge wild reserves of uninhabited land are not as relevant to the Japanese quest for a wilderness experience as they are to other cultures. The Japanese can see in a single leaf what, for an American, would require a redwood tree if not a park full of them. This is why the formal garden is so important in the Japanese tradition of nature appreciation. Here, in miniature and metaphor, the whole world is represented.

The American Walt Whitman, whose Leaves of Grass was published in 1855, and Whitman's transcendental teachers, Ralph Waldo Emerson and Henry David Thoreau, came closest to the Japanese position. Thoreau, after all, found all he needed in a small pond called Walden on the outskirts of a New England town. But for most Americans the wild and wide-open spaces have been essential for stimulating an intense awareness of nature. Not having the luxury of wilderness, the Japanese have long approached the problem of communion with nature from a different set of cultural assumptions.

From the management perspective several conclusions may be drawn from this unique Japanese relationship to nature. One is that external distractions which would ruin an environment for Americans are less of a problem for the Japanese. In a real sense the crowds and the inappropriate park development are not "seen" in Japan. The people tend to look "through" these distractions to the meanings of nature. They concentrate on the internal environment of their own minds. So it is that a Japanese can have a deeply moving experience even in the sardine-like setting of Fuji. Or he can simply contemplate the mountain from a distance and be satisfied. Given the rapid depletion of the world's scenic resources this may well be the way of the future in outdoor recreation. One thinks of the remark of the American ecologist Aldo Leopold that "recreational development is a job not of building roads into lovely country, but of

building receptivity into the still unlovely human mind."

NEW ZEALAND

Topography has been a strong ally of wilderness preservation on the South Pacific island first known as "the long white cloud." Some of that whiteness was snow on high peaks. Some was real cloud gathered by New Zealand's mountainous backbone. Civilization on the South Island spreads eastward along the watercourses braiding the coastal plain. The mountains on their west side drop directly into the Tasman Sea, a spectacularly abrupt meeting.

This ruggedness and a low population-to-land ratio elsewhere on the islands sufficiently retarded settlement and roads so that in 1952, when the National Parks Act consolidated park laws, there was an abundance of wilderness left to protect. The Act, which is burdened with the same ambiguities respecting preservation and public enjoyment that characterized the 1916 National Park Service Act in the United States, refers specifically to wilderness. Section 34 empowers the various park boards (there is one for each national park) to designate wilderness areas with the concurrence of the National Parks Authority. This process does not insure permanent preservation. In the first place, the attachment of wilderness status to an area within a park is an administrative decision only. There is no statutory authority for wilderness in New Zealand. Second, the park boards are composed of representatives of various local interests, many of which are not inclined toward preservation. The private landowners and grazers commonly encountered on the boards are generally in strong opposition and so are the ski and hydropower factions. Tourism is represented on the boards, but it often works at cross purposes to the wilderness interest. At Mt. Cook National Park small planes ski-equipped to land on snowfields have long been part of the tourist scene. Their standard package is a half-hour flight that includes landing on the snow in what would otherwise be superb wilderness well inside the park boundaries. Climbing huts, which in Mt. Cook are lavish and radio equipped as bases for search and rescue operations, also disqualify an area as wilderness under the terms of the 1952 legislation. This leaves only a few, less desirable and often less scenic areas for wilderness designation within the parks.

The ski planes are only part of the problem of New Zealand tourist development. Although not in the class of the African nations and Malaysia where foreigners constitute at least 90 percent of the visitors to nature reserves, New Zealand covets and seeks the foreign tourist dollar. The Tourist Hotel Corporation is a government agency with full rights to develop facilities in any of the national parks. At Mt. Cook National Park it is the force behind the expansion of the park village and its reorientation toward the luxury tourist. Self-sufficient backcountry users are pointedly discouraged in the park. Signs at the luxurious Hermitage Hotel warn them to keep their boots off the carpets. The biggest liability of the non-luxury tourist from the standpoint of the Tourist Hotel Corporation

is that they do not spend very much money. Far better, from this point of view, to cater to the charge-card-carrying, generally older person who supports the tourist "industry." These assumptions, which are widespread in New Zealand, naturally work against an emphasis on wilderness allocation and management.

The pattern is plain at the huge (3,000,000 acres) Fjordland National Park in the southwest corner of the South Island. Most of those who forsake the hotels at Milford Sound and Te Anau to see something of the park's vast backcountry do so on organized Tourist Hotel Corporation walks along the world-famous Milford Track. The essential idea is excellent: the Track offers a way other than the paved road to reach Milford Sound. But from the standpoint of experiencing wilderness, there is much to be desired. All the walkers do is walk. Guides lead them along heavily signed trails. At the end of the day huts with dining rooms, laundries, hot showers, and bunk space for as many as 40 persons await their arrival. At one hut, set in an otherwise wild valley, an airstrip has been carved, and a small plane arrives an hour before supper to give the walkers short rides at $10 per individual. Of course the Milford Track can be looked on as a threshold outdoor experience, something that leads a person on to a real wilderness trip. And the intense organization, combined with the existence of sleeping and eating huts, virtually eliminates the problems caused by thoughtless or inexperienced campers. But wilderness is not a primary concern of management. In fact only one small coastal island in vast Fjordland National Park has been officially dedicated a wilderness area.

The place of wilderness in the New Zealand cultural context is well illustrated by the Lake Manapouri controversy. It began in the late 1950s when plans to construct an aluminum smelter on the South Island near Fjordland turned attention to the hydropower potential of Manapouri and its companion lake, Te Anau. By 1963 it appeared to shocked conservation groups that the New Zealand government had in fact contracted with the foreign smelter investors to raise the level of the lakes. The storm of protest (on the grounds of losing scenic beauty and ecological integrity, not of wilderness recreation) led finally to Manapouri becoming a central issue in the 1972 national elections. The victorious Labor Party ran on a platform of not raising the lakes. Celebrations were widespread, but overlooked was the fact that a hydropower development which did not entail lake raising was being completed right in the heart of one of the wildest regions of Fjordland National Park. It resulted in a 6-mile tunnel being dug 700 feet beneath a mountain wall for the purpose of draining Lake Manapouri into the ocean at Deep Cove. The influx of water from the lake turned the salt-water fjord fresh for 15 miles. But far from being the subject of regret, New Zealand proclaimed the Deep Cove-Manapouri development an engineering wonder and added it to the list of tourist attractions.

Recently, statements of New Zealand park leaders suggest that the management of outdoor recreational resources for nonwilderness purposes will be scrutinized at least. Speaking in 1970 at a

parks planning symposium, the chairman of the Tangariro National Park Board expressed dismay at the developments that were rapidly transforming the park into a downhill ski resort.

The experience of the United States, he pointed out, showed that parks could be loved to death by hedonistic and ignorant people. The answer to this problem was a biocentric philosophy - preservation ahead of pleasure. He concluded his remarks with a suggestion for all park entrance signs in New Zealand: "THIS IS A NATIONAL PARK. IF YOU CAN DO IT ANYWHERE ELSE DON'T DO IT HERE." This advice favors wilderness, but New Zealanders may find it easier to apply in Nepal where they are the principal advisers in creating Mt. Everest National Park than on their home islands.

AUSTRALIA

In contrast to New Zealand, geography has not supported nature preservation and management in Australia. The continent is old and worn. Its highest points are gently rounded plateaus under 8,000 feet. Compared to true alpine regions, roads are easily constructed everywhere on the continent. Another problem is that several needs and activities necessarily compete for the continent's limited rooftop. The classic case is in the Kosciusko National Park in New South Wales where the same mountains are used for downhill skiing, a huge hydropower water-supply development, and wilderness preservation. On the vast desert reaches of what Australians call "the Outback," wilderness qualities certainly exist, but only because motorists and pilots are few and far between. There is, in other words, a large area of wilderness but few designated "wilderness areas" apart from the Elliott Price Wilderness National Park. The sheer enormity and undisputed emptiness of the Australian continent (roughly equivalent to the continental United States) and the small population (about 11 million, mostly concentrated on the southeast coast) has not created much concern for the protection of nature. There is too much frontier and frontier thinking. Like Canada, Australia suffers in these respects from the assumption that its problems stem from too much wilderness, not too little.

The Australian political system is also a factor in wilderness preservation and management. The central government in Canberra has jurisdiction in federal territories only. Each state government is supreme in its area and creates and manages so-called "national" parks according to its own needs. Kosciusko National Park, for instance, is a creation of the government of New South Wales, not the government of Australia. Lamington National Park (as well as the Great Barrier Reef) "belong" to the government and people of Queensland. The management policies differ in each state. Consequently, a national effort to preserve wilderness is extremely unusual. The states are the effective mechanism for park protection and administration in Australia.

Still, there has been a handful of Australians, mostly inspired by Americans such as Theodore Roosevelt, Robert Marshall, and Aldo Leopold and by American legislation like the National Parks Service Act (1916) and the

Wilderness Act (1964) for whom effective wilderness management was and is a pressing concern. The father figure was Myles Dunphy. His efforts, beginning in 1914 in organizing the "bushwalkers" of Sydney, led to proposals by the 1930s for establishing wilderness areas in several of the national and state parks of New South Wales. Dunphy was not dedicated to solitude or even low-density recreation. Provided he entered the area with a pack, prepared to be self-sufficient, he was welcomed into the camaraderies of "the people of the little tents." In the case of the Mt. Kosciusko region, Dunphy and his colleagues in the National Parks and Primitive Areas Council directed most of their energies against grazers and developers of both hydropower and tourist facilities such as downhill skiing. His idea was for park zoning that would divide such things from wilderness. Dunphy counted on the support of the scientific community for this idea, but here he was surprised. The scientists indeed wanted wilderness but only for the purpose of scientific research.

In the course of time, scientists and bushwalkers, joined later by soil and water conservationists learned the advantages of presenting a united front against development. On June 5, 1944, they enjoyed their first success when over a million acres in Australia's highest range was designated the Kosciusko State Park. This act of the New South Wales government contained a provision authorizing up to one-tenth of the park as "a primitive area." The criterion for such places was that the primary aim of their management was preservation of natural conditions. This became exceedingly difficult after 1949 when the giant Snowy Mountains Hydroelectric Authority moved into the park with an ambitious project aimed at transferring water from one side of Australia's eastern continental divide to the arid west. Grazing also continued to be widespread in Kosciusko.

By 1960 pro-wilderness forces resolved to use the authority of the 1944 statute to save what wilderness qualities remained in Kosciusko. Their plan entailed reserving the park's highest land (generally above 6,000 feet) as wilderness. In 1963, over heated protests of the hydropower interest, park authorities approved the plan (it was not statutory). By 1967, when Kosciusko was renamed a "national park," four wilderness areas existed. From the American viewpoint these were hardly wild, but they represented the best Australia could do in an accessible area subject to competition from a number of conflicting uses.

Where the competition has been less severe, Australians have done better by their wilderness. Lamington National Park in the subtropical rainforest of Queensland is roadless except for two widely separated lodges. The state intends that any further development occur on the edges of the park's wild core. Tasmania's Cradle Mountain-Lake St. Clair National Park offers a chance for a five-day hike through indisputable wilderness. The only distracting feature is a system of huts, but these can be avoided by the self-contained backpacker. In the Outback there is an abundant wilderness, but the vastness and hostility of the country, not management, is primarily re-

sponsible for its preservation. The Simpson Desert National Park sprawls over the Queensland-South Australia border for some 30,000 square miles. In fact Australia has the opportunity of creating the largest wilderness reserve in the world from the Outback where distances between settlements can be more than a thousand miles. Much of this land has been declared a reserve for aborigines. In theory the aborigines hunt and gather there. In fact there is virtually no dependence on it for subsistence any more. But in a time of social sensitivity over the treatment of these native people, the Australian government is reluctant to make changes in the status of aboriginal reserves. Undesignated and unpublicized, the desert vastnesses will likely remain wild for decades to come. We are reminded by this that preserving wilderness really means leaving it alone.

The 1964 Wilderness Act of the United States and a growing sense of the disappearance of the primitive have in the last decade prompted a vigorous defense of wilderness on the part of a small group of Australians. Their finest efforts came in the early 1970s in an abortive effort to save from inundation as part of the Gordon River hydropower project Lake Pedder in the heart of south-west Tasmania's virtually unexplored wilderness. Still the Lake Pedder controversy, like America's Hetch Hetchy battle a half-century earlier, did much to rally the wilderness defenders throughout the nation. One of the consequences was the appearance of The Wilderness World of Olegus Truchanas in 1975. The book celebrated a photographer-explorer and a country, Tasmania's recently ravaged Southwest, that claimed his life. Its publication marked the emergence of an unabashed Australian love of the wildness of their continent. Another milestone was the 1974 appearance of The Alps at the Crossroads. Its purpose is the preservation of the remnants of Victoria's mountain wilderness in an Alpine National Park coterminous with Kosciusko National Park in New South Wales. The book is really a history of the whole wilderness movement in Australia and concludes with recommendations for management of the proposed park. These recognize at the outset that "many types of recreation do not coexist successfully." It followed that wilderness areas would be established within the park. Active management of these would facilitate phasing out of the omnipresent Australian fire road. Future fire control would use helicopters or men on foot. Private vehicles would, of course, be barred and existing huts phased out. As for grazing, a traditional activity in the high country, the recommendations hedged but expressed hope that long-term policy could be directed to removing cattle from designated wilderness.

The most interesting recommendations for management of wilderness in the proposed Alpine National Park concerned rules regarding backpackers. The quotas and permits now becoming omnipresent in the United States were not favored. Management should allow people to go where they wished in the park backcountry because this freedom was the essence of wilderness adventure. In time, it was recognized, crowding might necessitate tighter restrictions, but for Australia this seemed a long way off. A

related point concerned danger. This, too, was seen as an essential part of the wilderness experience. Management should content itself with providing information on weather conditions and checking equipment and experience. But no adult should be prevented from entering the backcountry for reasons of potential danger. Then followed a significant statement: "If this most important principle of adventuring is to be upheld we must be prepared for death in the mountains. Inexperienced rock climbers will fall, canoeists will drown, ski-tourers will freeze and bushwalkers will die of exposure. It is payment in kind for the pleasure that is sought. The subsequent risk to individuals engaged in search and rescue operations, and the expense of these, are unfortunate but necessary costs imposed on society by the need of individuals to breathe."

Although only recommendations, such ideas pioneer a frontier of wilderness management that even the United States has not fully explored. It boils down to whether a person has the right to risk his life. American thinking on this "safety" issue of wilderness use emphasizes protection of the visitor. This concern often translates to a preference by management for the commercially guided party as opposed to do-it-yourselfers. But a growing, countervailing position argues that overemphasis on professional guides threatens to create a "safari syndrome." Self-led, qualified, private parties, it contends, represent the most appropriate use of wilderness for recreation. This is not merely an academic matter. With the advent of visitor quotas for popular areas the division of the total user "pie" between the commercial and non-commercial sectors has become one of the most controversial management issues in the United States.

EUROPE

One reason that wilderness preservation has made so little progress in Europe is that, by many definitions, there is no wilderness left to preserve.

It is hard for people with American criteria to understand the intensity of civilization in those parts of the world used by agricultural and technological man for thousands of years. Consider the region around the Matterhorn (Cervino to Italians) on the Italian-Swiss border. Justly famous for its scenery, the area is almost totally devoid of wildness. The spectacular high valley leading to the picturesque resort town of Zermatt in Switzerland is laced with a web of civilization. Roads and railroads work their way along the river which is controlled by a chain of hydropower installations. Trams and lifts crisscross the narrow gorge. Tunnels pierce cliff faces. Clusters of buildings occupy every level nook, and farms extend upward to nearly impossible slopes. The presence of cattle has lowered the timberline several hundred feet in this region and generally throughout the Alps. Chalets of the wealthy and climbers' huts perch on highest outcrops. And, crossing the ridge-top divide, one finds the same paraphernalia of civilization extending up the other side. The civilizations of Switzerland and Italy meet at the Theodulepass, connected by ski lifts, just a few

thousand feet below the Matterhorn. There is no possibility of a frontier in the American sense - a dividing line between civilization and wilderness.

Man has been here a long time. Only the sheer rock faces of the peaks themselves are without human impact. Spectacular, yes; awesome, yes; dangerous, yes; wild, no. And the wildness is not just absent to American eyes. Even Europeans, with understandable different standards for defining what is wild, do not think of the Matterhorn as wilderness. For technical rock climbing it is legendary, the birthplace of mountaineering. Wilderness is something else.

One finds the same saturated level of civilization on Europe's highest peak: Mt. Blanc. The town of Chamonix guards the French side as Courmayeur does the Italian. A succession of cable cars traverses the surface of the great mountain and an eleven-kilometer tunnel lies beneath it. The European landscape is almost completely humanized.

In this regard it is instructive to recount the experience of ecologist Raymond Dasmann who went to Geneva to assume a position with the International Union for the Conservation of Nature and Natural Resources. In one of his first leisure moments in Switzerland, Dasmann opened maps of the nation and located the largest blank space, high up in an alpine valley, where, he assumed, he could find wilderness. A few weeks later Dasmann gathered backpacking equipment and set off for the mountains with great expectations. After driving to the vicinity he parked beside a country road and began to walk. His apprehension rose because the road never ended. Neither did the succession of cultivated fields, pastures, and dwellings. At last Dasmann reached the heart of his Swiss wilderness, the place he planned to camp. He found himself in a barnyard! Cows stared curiously and children waved at the strange man with a pack on his back. Sadder but wiser, and with a deeper appreciation of the great open spaces of his own country, Dasmann drove back to Geneva and returned his backpack to the closet.

Switzerland does have a national park. It is a scenically magnificent expanse of mountains and high valleys on the border of Switzerland and Austria at the headwaters of the River Inn. This region has been used intensely for economic purposes from the Middle Ages until the early part of the 20th century. The land that became the park in 1914 supported mines, foundries, and chalk ovens. Today no such use is permitted and with the exception of regionally extinct wildlife the natural qualities of the environment are returning. Under proper management wilderness conditions could be recreated in this area, but it would require several centuries.

Recreational use is restricted in the Swiss National Park. Had Raymond Dasmann sought out the area for a backpacking trip he would, once again, have been frustrated. The park was established as a biological sanctuary, and its charter insists that it be "protected from all human influence and interference." It exists in the name of science, not recreation. Camping is prohibited as well as mountain climbing. Visitors are permitted access only during daylight hours. They are further restricted to "authorized

paths." One can step off them to sit down or eat lunch, for instance, only in areas a few yards square marked by yellow boundary posts. Even if wilderness qualities do return to this part of Switzerland, obtaining a wilderness experience in the American sense will be extremely difficult.

The situation of Great Britain offers another pattern of environmental protection. England is a garden or at least a giant pasture. Its landscape is totally utilized and it has been so for thousands of years. As a consequence, the movement for environmental conservation in Great Britain has never involved wilderness preservation. Its earliest manifestations in the 19th and early 20th centuries concerned historic preservation and what the English call "access to the countryside." The latter amounts to nothing more than the right of people to walk across pastures and cropland which have been in the hands of large landlords since the "enclosures" of the 18th and 19th centuries.

After World War II national parks of the United States and of the dominions attracted the interest of the English. In 1949 the National Parks and Access to the Countryside Act created the statutory framework for establishing what now amounts to ten national parks. From the American point of view the English parks are unusual because they include a quarter of a million residents. These are not rangers and employees of concessionaires, but ordinary citizens who lived in the parks before their establishment or moved in afterwards. What in fact is being preserved in the national parks of England and Wales is a rural lifestyle complete with traditional architectural practices. There is, of course, nothing wrong with this, especially not to the English who value the human "associations" a landscape may contain. But the English situation demonstrates that by the time an old and intensely developed nation like Great Britain decides to establish parks and reserves there is no alternative but to include substantial amounts of civilization. Modern England did not have an option of preserving wilderness.

Some alpine regions in Europe do, of course, permit recreational use, including overnight stays. But the European understanding of "camping" is vastly different from that of cultures with larger and wilder areas of undeveloped land. The self-sufficient backpacker with his tent, sleeping bag and food is, as Raymond Dasmann discovered not common in Europe. What Europeans think of as "hiking" consists of walking from hut to hut through scenic country that is usually grazed and may even be farmed. The term "hut" fails to dignify these operations sufficiently. Most of them have a resident staff who, for a price, serve beer, wine and hot food. There are bunk beds, blankets and sometimes even showers. Many of the huts are located at the ends of chair lifts, cable cars or cog railways. In winter they serve skiers. Indeed the alpine huts, like the pubs and inns frequented by English hikers, succeed because the areas being traversed on foot are relatively small. It is almost impossible on a hiking trip of 100 kilometers in the Alps to get more than an hour or two from commercially provided room and board.

While the American seeking a "wilderness experience" or an Australian bushwalker might look with disdain on the European mode of appreciating nature, the hut system does have its advantages. One is that it concentrates recreational use. Instead of twenty separate cooking fires and toilet areas there is only one. The huts, moreover, can install sewage systems and other hardware that protects the environment. The satisfaction of doing it for oneself is gone in the European arrangement, but the land, apart from the hut area itself, is often better protected than in regions frequented by backpackers. This consideration has figured in justifying American adaptations of the hut system such as the High Sierra Camps above Yosemite Valley in California and the Appalachian Mountain Club huts in the White Mountains of New Hampshire. Still, advocates of hut camping must be prepared to forego a large part of the challenge and the charm of outdoor living in other parts of the world. Many people cannot enjoy solitude together.

The only part of Europe that approaches the wilderness according to American criteria is the northern extremity of Norway, Sweden, and Finland. This area is virtually inaccessible, requiring at least a day of foot travel just to reach the periphery. The harsh seven-month winters contribute to the wildness of the land of the Lapps. Sweden, in particular, has been active in wilderness preservation. As early as 1909 it became the first European nation to set aside national parks - six of them. Today there are sixteen and the northern ones like Sarek and Padjelanta equal Yellowstone in size. Hydroelectric installations have compromised parts of the parks, but no more so than Hetch Hetchy Reservoir compromised Yosemite.

Recreational use of Sweden's wilderness parks (they are called such by the Swedes) is extremely light - about 5,000 persons annually as of 1972. In Padjelanta National Park the huts and cottages familiar in Europe's Alps are present. But visiting the rugged mountains and glaciers of Sarek National Park necessitates American-style backpack camping.

Other than fish and game laws, Sweden has placed few controls on wilderness visitors. One deterrent to regulation is the common law principle of allemanstratten or "every man's right." A product of the people's reaction against feudal land use practices of the Middle Ages, it provides that everyone in Sweden may wander freely in open country, even on privately owned lands. Public rights extend to camping and gathering berries and mushrooms. In view of this fiercely defended cultural tradition, the kinds of biocentric management principles used for wilderness in the United States seem unlikely to gain many converts in Sweden.

Perhaps the most difficult problem facing Sweden in its efforts to protect and manage wilderness is the presence of native peoples whose use of the recently reserved parkland is of long standing. The nomadic Lapps have pastured their reindeer herds, hunted, fished, and lived in Sarek and especially Padjelanta for generations. The Swedish government recognizes their right to continue this use but is quite dismayed at the Lapps' recent preference for snowmobiles over ski and dog sled

travel. While a Lapp on skis might be an attractive feature of the park - a kind of "man of the wilderness" in the eyes of many visitors - a Lapp in a snowmobile is likely to offend the visitor who must walk into the area. It is a problem comparable to grazing in some American wildernesses. A mounted cowboy is not nearly as disturbing as an agribusinessman riding herd in a helicopter.

Clearly Sweden faces the necessity of weighing wilderness values against the interest of native peoples. The presence of the Lapps does not automatically disqualify the northern parks as wilderness, but their technological ambitions well might. Still if wilderness preservation involves forcing a primitive technology on aspiring natives, the social and political pressures against wilderness are likely to reach intolerable levels.

The Lapps and their reindeer like East Africa's Masai and their cattle raise a critical question for world nature preservation: are people, or lifestyles, part of what is being saved? Developing nations see no issue here and frequently make a place in parks and reserves for aborigines who have traditionally used these areas without the aid of refined technology. In Malaysia's vast national park, the Taman Negara, for instance, oran ulu (literally, men from the headwaters) are permitted to live as they always have, even to the extent of killing wild animals that are otherwise protected in the reserve. The rationale is that oran ulu are part of the ecosystem, just like tigers. Their presence is regarded as enhancing the visitor's experience rather than detracting from it.

But developed nations have more difficulty accepting the idea of men in protected wilderness. The aversion extends even to aborigines and to ancient immigrants such as the American Indian. The Seminoles were once considered a "feature" of Everglades National Park, and there are native Americans living in or close to Canyon de Chelly National Monument and Grand Canyon National Park, but as a rule the United States has elected to separate nature preserves and Indian reservations. Still, if one examines the initial call, in 1832, for a national park in the United States by the artist George Catlin, one finds that it clearly includes the idea of wild people and wild country in one composite preserve.

THE SOVIET UNION

The hunting reserves of feudal lords marked the beginning of Russia's experience with nature preservation and management. After the 1917 revolution all land was nationalized and remains so. This total public control creates, in theory, a promising political framework for all kinds of conservation including that of wilderness.

After 1917 the U.S.S.R. began the creation of a nationwide system of zapovedniki - literally forbidden areas. One of the early calls for such reserved areas was made by V.P. Semenov-Tya-Shanskiy in 1917 under the title "On the types of locales in which it is necessary to establish zapovedniki analogous to American national parks." The system expanded until, in 1951, there were 129 zapovedniki totaling more than 31 million acres. Their purpose was and is largely scientific.

Zapovedniki are, in the words of a 1960 law, primarily "outdoor laboratories for the study of naturally occurring processes." It is true that some of the reserves are used for recreation, but most of them exist for the resident scientists and their research.

The zapovedniki, which presently amount to about 0.3 percent of the total area of the U.S.S.R., contain an extensive amount of wilderness. The wild area is not given legal recognition; in fact there is no word for "wilderness" in Russian. But increasing numbers of Russians are turning to the zapovedniki for wilderness forms of recreation. In some cases they are not rejected. The Kavkaz zapovednik in the Caucasus near the Black Sea is open to camping, climbing, and hiking. This wilderness contains virgin forests, wolves, and snow leopards. Management of the area is vague with resulting damage to the resource by careless visitors. Since there is no single managing agency for zapovedniki and the staffs that exist are composed of natural scientists rather than social scientists and planners, reform is not likely. The only response of the government to recreational pressure on zapovedniki has been to launch plans for national (or "natural") parks. The movement began only in the late 1960s and has so far made an inventory of areas. The primary one is the Lake Baykal region in eastern Siberia which now enjoys national park status. If parks are established, indications are that they would have a wilderness core and a surrounding zone developed for mechanized tourist and administrative use.

The Soviet political context makes the creation of zapovedniki relatively easy compared to the establishment of a wilderness under the 1964 Wilderness Act in the United States. But the same degree of central political control also facilitates their abolition. For example, in 1951 about seven-eighths of the reserved area was suddenly eliminated from the system. Some of the casualties were as large as Yellowstone National Park. Explanations generally point to economic needs associated with the fifth Five Year Plan. Since 1951 the system has been partially reestablished, and the growing demands of urbanized Russians for wilderness recreation suggest that pressure for expansion will increase. For the same reasons it appears that restriction of reserved wilderness to scientific purposes will be increasingly difficult.

CANADA

The Canadian experience furnishes added evidence for the paradox that the possession of wilderness is a disadvantage in the preservation of wilderness. In Canada's case it is the north-country - unbelievably huge and empty, a continuing frontier that elicits frontier attitudes toward land. The result of having this vast reservoir of wildness to the north is that the urgency for wilderness protection is lessened, with little or no need to devise and apply sophisticated techniques of wilderness management. "Our problem," they say, "is too much wildness, not too little." This is precisely the American attitude of a century ago. Understandably, the wilderness preservation movement in Canada lags several generations behind that in the

United States. Paradoxically, the best thing that happened for wilderness protection in the United States was for the frontier to vanish in 1890.

In the beginning the Canadian park movement was highly utilitarian just as it is today in places like East Africa. The 1885 reservation of the hot springs at Banff, Alberta, and the 1887 enlargement of this area under the Rocky Mountain Park Act were directed at creating a resort, not a wilderness. The Dominion Forest Reserves and Parks Act of 1911 was not better in this respect. The statute did not distinguish between wilderness preserves and commercially oriented forest reserves - the same confusion that characterized American thinking in the 1890s. Canadian wilderness management in the subsequent decades consisted of advancing recreational development as fast as possible. Although he had a strong personal commitment to wilderness, James B. Harkin, the first Commissioner of the Dominion (later "National") Parks set the tone in 1922, proudly declaring that "the mountain parks are worth $300,000,000 a year to the people of Canada in revenue from the visiting tourists." This fact was vitally important to the survival of the park system, Harkin continued, because "we have to show that the movement will pay for the efforts many times over." Just as it does today in Kenya and Tanzania, this meant providing opportunities for tourists to spend money. In park townsites (like Banff), hotels, swimming pools, tennis courts, golf courses, ski slopes, and campgrounds with laundromats became standard features in the Canadian parks. Wilderness was forgotten in the drive to make the parks economically respectable, socially acceptable, and politically viable. If anyone was concerned about wilderness, the stock suggestion was "go north." This was, of course, an excellent idea but not practical for the Canadian of average means and vacation opportunities. The far north was wilderness but not meaningful (i.e., accessible) wilderness in terms of the typical citizen's recreational pattern.

Beginning in 1930, when the National Parks Act mandated the preservation of parks in an "unimpaired" condition, a concern for wilderness started to struggle against the dominant current of Canadian thought and policy. It was an uphill fight. Even in existing wilderness preserves (notably those of Yoho and Wood Buffalo National Parks) mining and lumbering continued into the 1950s. On the provincial level, as important in Canada as it is in Australia, Ontario passed a Wilderness Act in 1959. Although weak (it did not formally close the land to economic or recreational development), the Ontario law was a first step comparable to the United States Forest Service designations of the 1920s. Canadians concerned with wilderness organized the National and Provincial Parks Association in 1963. They took heart from a 1964 clarification of park purposes in the House of Commons: "National Parks cannot meet every recreational need; the most appropriate uses are those involving the enjoyment of nature and activities and experience related to the natural scene." One of the first crusades of the Association was to have the highly developed townsites in Banff and Jasper National

Parks removed from park status and reclassified as some kind of mass recreation area. The point was to rededicate national parks to wilderness preservation, but the reclassification attempt has not yet been successful. Indeed the Canadian parks, notwithstanding their superlative wilderness qualities, continue to be perceived by the society as quite civilized resorts for what the Canadians call "holidays."

Still the gap in attitudes and policy that separates the United States and Canadian relationship to wilderness is not permanent. In time Canadians will close it, particularly as the growing urban character of their civilization increases the need for the wild. Already there are signs in the nation of a maturing wilderness consciousness and resulting management refinements. One case is the appearance in 1970 of Wilderness Canada, edited by Borden Spears. A lavishly illustrated coffee-table book in the tradition of the Sierra Club's Exhibit Format Series, the volume is a paean to the wildness of Canada and a recognition of its impact on Canadian culture and character. Its discussion of the wilderness-inspired paintings of Tom Thompson could today be supplemented with an analysis of the popular music of Gordon Lightfoot. In Marked by the Wild (1973) edited by Bruce M. Littlejohn and Jon Pearce, Canadians have an anthology of literature shaped by their wilderness.

Simultaneously with and related to the rise of wilderness appreciation in Canada is a start toward turning back the frontier traditions of exploiting unoccupied land. The recent establishment of vast wilderness reserves on Baffin Island, along the South Nahanni River, and on the Spatsizi Plateau in northern British Columbia was relatively painless, comparable to creating a national park in the unoccupied Yellowstone region in 1872. More of a test for the Canadian commitment to preservation is the 1973 rededication of Quetico Provincial Park in western Ontario for wilderness recreation along with the elimination of logging and mining operations in the park. And the Quetico, benefiting from being one of the most studied wildernesses, has instituted sophisticated quota and permit systems designed to keep recreational use within the carrying capacity of this canoe country. On the federal level, Canadian park authorities are using their power to impose visitor quotas on or even to close any wilderness. But the motive for such management tends to be short-term, emergency situations occasioned, for example, by fire or wild animal (bear) danger. Occasionally, however, excessive recreational use has been the cause of restrictions. While temporary (a parks-are-for-people philosophy that resents any limitations remains strong in Canada), the use of management authority in this way points toward the emerging American pattern. So does the 1974 decision of Alberta voters to reject a $5 million ski development package for Lake Louise.

The science of wilderness management in Canada has closely followed the lead of the United States. Revisions in 1964 of national park policies began a movement away from fixation on the recreational aspects of wilderness value as well as from concentration on anthropocentric criteria

for wilderness management. Indeed Canada's five-stage zoning system of national park master plans reaches a level of biocentricity comparable to that of the National Wilderness Preservation System in the United States. Indeed some parts of established wilderness in Canada are justified without regard to human visitation.

EAST AFRICA

In East Africa there is wildness without wilderness. Visitors to the national parks and game reserves of Kenya, Tanzania and, before political difficulties effectively closed it, Uganda are unquestionably brought face to face with the primeval. But it is not the objective of park managers in these nations to offer people a wilderness experience. The guiding concept instead is to keep visitors at the edge of the wild or in enclaves of civilization (moving, as with vehicles; or stationary, in the case of lodges) within the wilderness.

This policy, really an adaptation of the European hut system, has several advantages from the East African standpoint. One is that it protects visitors from animal attacks. This danger is quite real, particularly for persons unaccustomed to coexistence with large, wild animals. For their own safety visitors must be strictly controlled. To permit self-sufficient backcountry camping by the inexperienced would be to invite disaster. A second reason for separating visitors from wilderness is the safety of the animals. Foot travelers frighten animals; for some reason people in cars don't. It is ironic that the mode of transportation least appropriate for wilderness is, in East Africa, precisely the one best calculated to respect wilderness conditions. Vans and land rovers, moreover, can approach to within a few yards of animals without occasioning discomfort to either the viewer or the viewed. A walker would be lucky to see a lion or a rhino. A biocentric philosophy of wilderness management is thus served in East Africa by the use of mechanized transportation. Lodges play the same role. By concentrating visitors in areas to which animals have become accustomed, there is much less disturbance than free camping would cause.

Finally, the denial of a wilderness experience to visitors to the African reserves has an economic advantage. Backpackers are notoriously low rollers when it comes to consuming goods and services. Their whole objective, after all, is to take care of themselves and usually with equipment purchased in other localities. Backpackers and other such people avoid the guides, tours, and lodges that generate income for the region in which a park exists.

So it is that East Africa has developed a unique way of bringing people and wildness together. Luxury lodges are the campsites and minibuses or land rovers the beasts of burden. Many visitors to the African reserves quite literally never set foot on the land. Vehicles deposit them on the doorsteps of hotels which they are repeatedly warned not to leave at peril of being hurt by a wild animal. But such restrictions do not pose any obstacles to viewing wild animals; from vantage points such as balconies or through the lodge windows visitors confront animals at a range of

just a few yards. The salt licks, water holes, and baiting arrangements incorporated into the siting and construction of the lodges insure an abundance of animal viewing opportunities. At The Ark in Kenya's Aberdare National Park a buzzer system in every bedroom summons sleepers in the event "something special" (a leopard, usually) approaches the lodge's floodlit salt lick. It is a situation, according to one tourist, "where caged people watch free animals." And it works reasonably well from the standpoint of both parties but at the cost of a true wilderness experience.

Particularly for those accustomed to wilderness recreation in other parts of the world, it is easy to put down the East African parks and reserves as giant Disneylands. In fact, they do resemble the drive-through animal parks and new cageless zoos of the United States and Europe. But consider the realities of wilderness preservation in the African context. To survive in a society that has little interest in them (98 percent of park visitors are non-African) parks and wild animals have to pay. In terms of the earlier discussion in this chapter, East Africa must "export" wild nature to justify its existence. The fact that tourism is the number one industry in East Africa largely explains the attention Africans pay to parks and wild animals. A poster in Swahili makes this clear: "OUR NATIONAL PARKS BRING GOOD MONEY INTO TANZANIA - PRESERVE THEM." If nature protection were not profitable, the fate of the reserves is clear. As remnants of the detested European colonial legacy, they would long ago have been chopped into farms and pastures. Indeed most European observers fully expected the coming of independence in the early 1960s to undo a half century of attempts to protect African wildlife. The parks would simply be abolished. Then the big jets began arriving in Nairobi with load after load of tourists and the picture changed sharply. In 1963 President Jomo Kenyatta of Kenya signed a statement announcing his nation's intention to maintain its nature reserves and inviting the world's help in this effort.

Because of tourism an animal in the viewfinder may be far more valuable in the long run than an animal in the pot. On the basis of the revenue they generate, wild animals in an African national park may be the most valuable in the world - race horses included.

Other motives for protecting nature certainly exist, but from the practical standpoint of saving the world's remaining wildness it is fortunate that the economic argument makes sense in less-developed countries. And it is fortunate that there is a clientele of civilized (actually overcivilized) peoples, whose money quite literally supports preservation efforts.

Few of those who use economics as an argument for nature protection regard this rationale as more than a stopgap. In time, they reason, the development of the societies in question will produce other motives for nature appreciation. Meanwhile the objective is to carry over a resource of wildness until such time as it is valued for more than its breadwinning ability. And that time may be not too distant: increasing numbers of third-world

people like Kenyans live in large metropolitan centers and have never experienced wild nature. For them too, wildness is a novelty, and in time the parks of their nations are likely to become places for them to enjoy rather than simply nature-exporting institutions.

Will this change in perspective come too late? In view of the present rate of illegal poaching (an African can make as much from the tusks of a single elephant as he makes all year in wages from a job), many feel the East African parks and reserves will be swallowed up in the next few decades by the rapid population growth and standards of living. This is particularly the case with areas geography does not protect such as the vast Serengeti Plain that sprawls across northern Tanzania and into Kenya. Americans should not be surprised at the gloomy forecasts. There are, after all, no national parks on the Great Plains of the United States, no buffalo in Iowa and Kansas. When the once great herds of buffalo (estimated from 30 to 100 million) declined a century ago, they disappeared with incredible speed. The downward spiral stopped only 900 animals short of extinction of the species and only because buffalo breed well in captivity. It is, therefore, hard for Americans to criticize East Africans, or any society, for exploiting nature. The United States has been a world leader in that endeavor as well as in nature protection. The only hope is that American errors as well as American successes can instruct and inspire other peoples in the cause of safeguarding a heritage of protected nature.

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